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POLICE PURSUIT DRIVING

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POLICE PURSUIT DRIVING

Prepared by

EDWARD WHITE JONES

N. C. State Highway Patrol

SECOND EDITION

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North Carolina Department of Motor Vehicles
Raleigh, N. C.

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The author is most appreciative of the valuable assistance of fellow-members of the North Carolina State Highway Patrol for their efforts, numerous hours of time and the living experiences recounted in the development of the fundamental procedures and techniques set forth in this book. Therefore, to those who have worked diligently, faithfully and loyally to make this publication possible, I dedicate "Police Pursuit Driving."

PREFACE

This manual is designed as a practical teaching and practice guide for the assistance of pursuit driving instructors. It is an original plan designed to fill an important need in the training of traffic law enforcement officers in the art of pursuit driving. It is hoped that this manual will enhance the ability of instructors who teach pursuit driving. It is designed, furthermore, to reduce the frequency of errors in pursuit driving and set certain standards and procedures to expedite the pursuit driving training of traffic law enforcement officers.

Before enrolling in this course, students should complete a course in "Driver Education" with "practice driving instruction," and a course in "Motor Vehicle Laws." The course is designed primarily for students vested with traffic law enforcement authority and equipped with regulation uniforms. Safety belts should be installed in cars and used without exception. (The course should be taught in the latter stages of a basic training school, in substantially the same order in which this material is presented.)

Training areas and skill courses are designed for cars with 9'8" wheel bases and 6'8" width (overall). Cars with longer wheel bases or of greater width and overall length will require proportionately longer and wider training areas.

The instructor should discuss each exercise at the beginning of the period and outline the objectives of the exercise. He should explain the plan of the exercise. His assistant should attend the classroom programs, call the roll, and substitute for the instructor whenever necessary. The instructor or the assistant instructor should demonstrate the plan of the exercise and the instructor will grade the students as they drive through the course. The assistant should correct the errors of the students at they are observed. The assistant instructor should see that warning signs are posted at both ends of the training area for maximum safety. When time is an element in the successful completion of the course, he should also keep time.

Experience in conducting a course of this type indicates that one instructor for each four students can provide excellent pursuit training. Classes of approximately thirty-two student officers can be taught very effectively under the supervision of an instructor and eight experienced traffic law enforcement officers with teaching ability and skill in pursuit driving. Classes of fifty to sixty should be split into two groups in the interest of economy and safety. Instructors should set up skill training courses in advance and become proficient in every phase of each driving maneuver in order that they may provide, within the allotted time, the maximum in instruction, demonstration, and student practice.

The allocation of time shown in the different exercises is based on an over-all allocation of 44 hours for the course. If less time is allocated for the course, the suggested time allocation for each phase of the course should be proportionately reduced. Each exercise may be set up so that a minimum number of traffic cones need be used at any one time for each of the training courses, and so that only two stop watches are needed.

ACKNOWLEDGMENT

The encouragement and counsel of our Commissioner of Motor Vehicles, Mr. Edward Scheidt, have been invaluable assistance in making possible this Police Pursuit Driver Training Manual and the author is most appreciative of his personal contribution and especially for his cooperation in making the facilities of the Department of Motor Vehicles available.

The professional skill of Mr. George Prescott, Mr. Paul Robinson, and Mr. Lawrence Mahinske, Engineers of the North Carolina State Highway Commission, who assisted in preparing the various diagrams, enhances the value of this manual. The contribution of Mr. Robert A. Burch, Traffic Engineer of the State Highway Commission, who reviewed the section pertaining to engineering construction of road surfaces, is very much appreciated.

Dr. Wallace Hyde, a graduate of the Center for Safety Education, New York University, and Director of the Driver Education and Accident Records Division of the North Carolina Department of Motor Vehicles, assisted in the preparation of the original manuscript and his contribution and assistance have been of immeasurable value to me.

Several other individuals have contributed to the preparation of this manual in the capacity of instructors, typists, editors, and proofreaders. To them, grateful acknowledgement is expressed.

To my wife, Ruth, for her encouragement and sympathetic understanding, I owe more than to any one else for it was she who sacrificed most of all to make the Police Pursuit Driver Training Manual a reality.

E. W. Jones

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EQUIPMENTS AND MATERIALS NEEDED FOR COURSE

Ammunition for detonator

Automobiles (radio equipped—one for each two to four students)

Chalk (for marking pavement)

Two detonator devices

Grading pads

Pads (for note taking)

Placards (8 each 6″ x 6″ marked "A", "B", "C", and "D")

Cellophane tape

Shade (cardboard to cover speedometer dial)

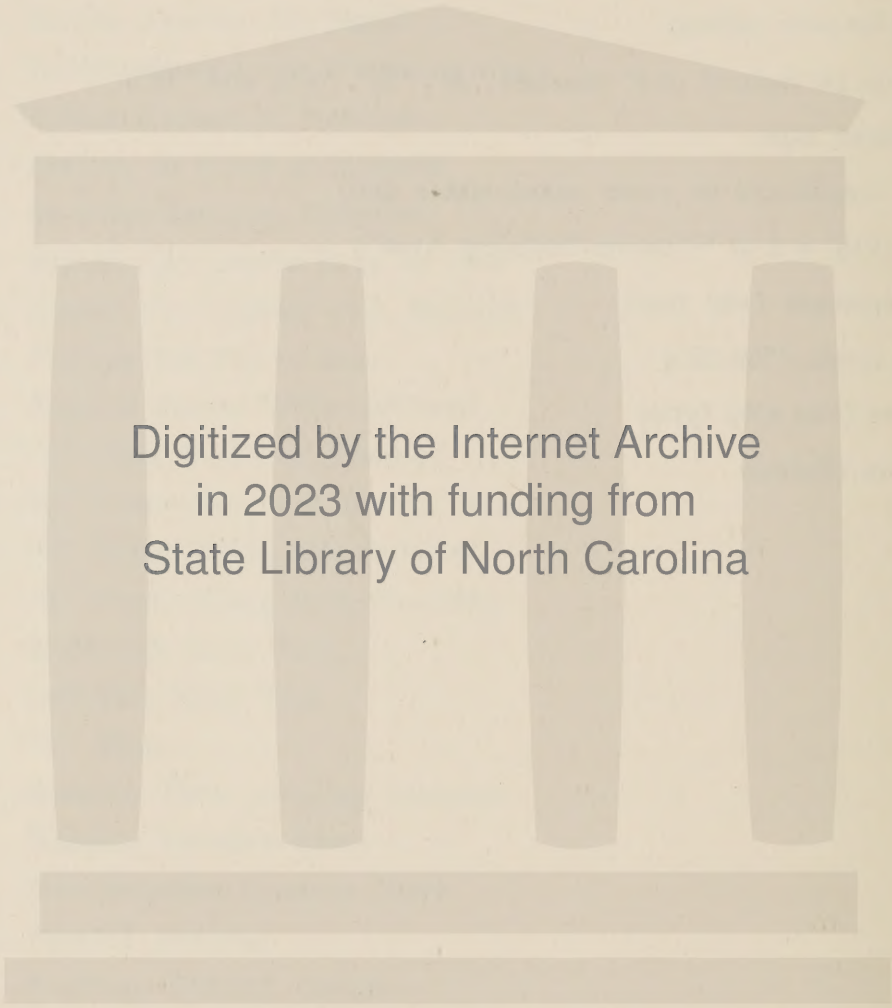
Signs (2½′ x 2½′ "Caution-Training Area")

Tape measure (100 feet)

Traffic cones (200-250)

Watches (two stop type)

Whistles (Police)



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CHAPTER I

INTRODUCTION TO PURSUIT DRIVING

(One Hour)

Pursuit driving demands mechanical skill, knowledge of laws governing motor vehicle operation, knowledge of the rules of the road, normal eyesight, normal reaction of physical reflexes, knowledge of highways or streets where pursuit driving will be carried out, mature judgment, and an attitude in keeping with departmental policies and safe, efficient operation. Experience is a valuable factor. It necessarily must be acquired through long hours of correct driving practices, close supervision by more experienced officers, and concentration on driving expertly. Traffic law enforcement agencies that have young, inexperienced officers for pursuit drivers have a problem in training them to drive safely and effectively in the pursuit of traffic violators, without incurring public criticism, and without injuring or damaging other users of the highways. A pursuit driver must do more than the average driver to avoid accidents. He must be able to anticipate hazardous movements by other motorists and be prepared to drive defensively in order to avoid collisions even when the other driver is in error. The young officer cannot assume that his driving operation will be improved by either the pursuit vehicle or the police uniform. His skill in driving in some former vocation may have then been adequate but may be inadequate for pursuit driving. For example, a deliveryman may have been able to divide his attention when making deliveries and looking for house numbers. This type of driving practice must be discontinued in his new capacity as a traffic law enforcement officer. In the new capacity he must at all times strive to drive safely, even while seeking and pursuing violators. The young officer's prior driving experience may have been limited to a familiar locality which the young officer may have known since childhood. Pursuit driving may demand that he drive in a new and unfamiliar territory under new and varied driving conditions. His driving may have been limited to daylight hours. Pursuit driving will call for expert driving during both day and night and under all kinds of adverse driving conditions. Heretofore it may have been possible to make decisions slowly, hesitatingly, and without difficulty. Now he must be prepared to make decisions of grave importance to himself and others with promptness and dispatch. If, in the past, he has exercised poor judgment, his judgment now must improve if he expects to become proficient as a pursuit driver. His reaction to emergencies must be prompt and correct. His driving skill may develop slowly. He cannot expect to achieve immediately the same degree of driving proficiency that older pursuit officers have acquired through years of experience and training. With diligent attention to the details and mechanics of safe driving, however, he should be able to progress toward more and more efficiency as a safe pursuit driver.

The purposes of this pursuit driving course are numerous. First, through practice of the different exercises, the young pursuit officer should develop skill in the operation of a pursuit car. His ability to handle a car in "close" places should be greatly improved over that of the average driver. He should learn to use the pursuit car to apprehend violators.

The instructors should constantly seek to point out dangers inherent in pursuit driving. At its best it can be a risky business. At its worst it can be a menace to the people on the highways. This must be avoided at all cost.

The instructors will set up standard safe operational procedures. For example, they will set up standard procedures for stopping an errant motorist, making pursuit turns, and backing a car. These standard procedures have been established after careful study and much experience and should be strictly adherred to by the student driver.

Instructors will constantly endeavor to detect unsafe driving practices and correct each for the benefit of the student pursuit driver. Emergencies which commonly arise will be demonstrated in order that students may learn to avoid them or to safely cope with them if they cannot be avoided due to the faults of other drivers. For example, a pursuit driver must be prepared to avoid a collision when a motorist brakes his car abruptly after being signalled to stop. On the other hand, the pursuit officer must avoid pulling alongside a motorist at an intersection because the motorist may attempt to make a left turn and thereby collide with the pursuit car. But whatever the emergency developed by driving practices of the pursued motorist may be, a pursuit driver must learn to safely apprehend the pursued motorist without endangering life or property. The patrol car must be used effectively for enforcement purposes—to apprehend skilled drivers, fleeing felons, daring, reckless drivers, and the average violator. All maneuvers in this course must be done according to set standards in order to develop skill. Each traffic law enforcement officer must realize that it is his duty to set a safe example before the motoring public. Drivers learn to adhere to safe rules in driving through observations of safe driving practices of good traffic law enforcement officers. The fact that an officer is engaged in pursuit of a violator does not relieve nor protect him from the consequence of a reckless disregard for the safety of others. Every precaution must be taken to protect the innocent motorists and pedestrians. A pursuit driver, when involved in a collision, may be subject to criminal indictment or to a civil suit for damages for injuries inflicted.

Pursuit driving is at best a hazardous task. The exposure to possibility of collision is great where the average pursuit driver drives 30,000 to 40,000 miles per year, much of it while answering emergency calls or in actual pursuit. A pursuit driver may operate his car for 1,000 to 2,000 hours per year under varied weather and traffic conditions. The danger to a violator being pursued may be just as great for a given period of time, but he is not likely to be exposed to such dangers for as many driving hours as the average pursuit officer. Another factor in favor of the violator is

that he may be operating over familiar roads while the pursuit driver may be in new territory.

A marked patrol car equipped with a flashing light and a siren does not necessarily assure a pursuit officer that he will be given the right-of-way over other vehicular traffic. Ninety-five per cent of all motorists and pedestrians may yield the right-of-way but the other five per cent may fail to see the pursuit car or hear the warning or, if they do see or hear, may ignore or respond incorrectly to the warning. If, as a consequence, a collision occurs, it results in failure to apprehend the violator under pursuit, possible death and personal injury and property damage, possible court action, and loss of time necessary to complete the accident investigation.

Distinctively marked equipment may give an inexperienced pursuit officer a false sense of security; but, in reality, it does not improve either his eyesight, his judgment, or his reaction to emergencies. It adds nothing to his knowledge or ability as a driver. Such knowledge and ability can only be expanded through a well-defined learning process. This process can be speeded up, however, through supervised instruction. A marked car does subject its driver to close public scrutiny. As a result, any deviation from a rigorous standard of safe driving practices may subject an officer to adverse criticism. Experience shows that such criticism is difficult to live down. In addition, and rightly so, young drivers show a tendency to pattern their driving styles and behavior after more experienced drivers. It is imperative that pursuit drivers, at all times, conduct themselves in a manner so as to reflect credit upon themselves since young drivers pattern their driving behavior after their driving model.

Generally, a pursuit officer will be able to successfully apprehend most of the motorists whom he pursues. Occasionally, however, the odds may favor the fleeing motorist. For example, flight may be over a dusty road. This materially reduces the chances for apprehension for the officer cannot afford to plunge blindly ahead. One mistake in blinding dust may prove fatal. The personal safety of a pursuit driver is of paramount importance. While a motorist may elect to pass another vehicle on a blind curve, at the crest of a hill, or in the face of oncoming traffic, a pursuit driver cannot afford to take the same chances. It is very likely that if an offender escapes on this occasion through taking such chances, other opportunities will arise which offer better odds for the pursuing officer. On the other hand, the violator may become involved in an accident if he continues to drive in such a manner. Normally, such a driver does not long escape apprehension or injury.

It is easy for an inexperienced pursuit driver to begin to develop unsafe driving practices since it is well-known that most drivers yield right-of-way to known police officers driving marked police cars. As the officer eases through a caution light, the average motorist will yield the right-of-way to the police car. If he insists on maintaining his right-of-way against any encroachment by the police vehicle, a collision may result from the unsafe driving action of the pursuit officer. Some officers tend to ignore

posted speed limits when answering emergency calls. Other motorists may continue to ignore such speed limits; but eventually, this practice, when resorted to by police officers, will provoke adverse criticism and result in difficulty for the pursuit driver or for his Department.

The practice of bumping another moving car is both dangerous and unlawful. Unless the use of such a deadly force is necessary to effect the arrest of a dangerous felon, bumping a car cannot be justified. Either one or both of the cars may wreck with resultant injury to drivers, passengers, pedestrians, or other motorists. Very few motorists who fail to out-distance a pursuit officer will escape. Generally, the driver will "lose his head" or stop and run on foot. Almost invariably a car is damaged by such a collision and must be repaired.

Young drivers may observe the action of an experienced pursuit driver and tend to feel that pursuit driving is easy. As a result they try to imitate his action and experience difficulty. Such expertness is acquired through correct practices and caution and not through trying to do the untried or impossible. A pursuit driver can never assume that the driver being pursued will safely traverse the next curve because he happens to enter it at a given speed. It is both possible and probable that he may wreck.

The amount of actual driving practice in this course will necessarily be limited because of the limited number of vehicles, instructors, and the number of hours assigned to the course. Each student should listen, study, learn, ask questions, retain information, and practice driving standards to the maximum extent possible. The proper attitudes should be developed toward driving, toward violators, and toward other highway users.

This course is not designed to develop race track drivers. The problems of pursuit driving are entirely different. Pursuit driving is a business with traffic law enforcement officers—not an idle sport. Highway obstacles are numerous and often hidden momentarily. Vehicular traffic and pedestrians cross paths often. The officer seeks to save lives and prevent injury. The race driver races for the thrill of the moment, heedless of the risks. He may race today and resume his usual occupation tomorrow. An officer must follow pursuit driving daily.

The pursuit driver will soon learn that other people have driving handicaps such as poor eyesight and deafness; some are inattentive. Some exercise poor judgment and some lack coordination. Some respond incorrectly to emergencies. These drivers and their unknown abilities and lack of skill present a continuous problem to a pursuit driver, especially when he is pursuing a motorist and must pass these drivers.

A pursuit driver must learn to move with dispatch and to drive in the same manner when the occasion demands it. He must exercise good judgment and realize that caution is imperative for his own safety. He must recognize that, in pursuit, time is of the essence. Many delays are unavoidable but a delay due to indecision is not. Circumstances may dictate the speed at which a vehicle should proceed. For example, transporting one who is suffocating or bleeding profusely from a wound which cannot be

controlled would merit speed not dangerous to life and property to secure immediate medical attention.

Excessive speeds in answering calls to property damage accidents or fatal accidents are useless except as they may prevent other deaths or injuries.

Pursuit drivers must exercise unusual care at all intersections, either controlled by signal lights or stop signs. All movement through them must be preceded by reducing speed and checking for other vehicle and pedestrian movements.

An officer who is assigned to drive a particular car must make certain that it is in safe condition for pursuit driving. This responsibility cannot be safely delegated to anyone else. The warning devices, horn, red light, siren, stop light, and turn signals should function satisfactorily. The lights must be in working condition and properly focused to permit the driver to clearly see objects, pedestrians, and other vehicles. The tires should be checked at regular intervals and especially after any exposure to damage for cuts, other defects, and for normal inflation. Brakes should be checked at regular intervals and after exposure to water. Sudden wetting of the brake linings may result in changes sufficient to cause a collision or other accident when the brakes are suddenly applied. The windshield wiper and washer should be kept in working condition.

Doors should be kept latched and locked and the safety belts should be worn properly during any pursuit. This may save the driver or passenger from serious injury in the event of an accident. The safety belt will serve no useful purpose unless it is properly used.

The steering apparatus should be properly maintained and no excessive play should be allowed to develop.

The interior of the car should be kept free of weapons or objects which could invite or provide resistance. A rain coat, for example, could be used to blind a driver if a prisoner were allowed to sit in the rear with it in reach.

The windshield and windows must be kept clean for maximum visibility. A film of grease may accumulate on the windshield and some detergent may have to be applied to clear up this condition.

The pursuit driver should practice sitting erect directly behind the steering wheel, not off to either side, in order to maintain maximum control of the steering mechanism. If the elbows are 1½ to 3 inches up from the steering wheel, he should be able to control the forward motion of the car to a maximum degree at high speed, especially if sudden clockwise or counterclockwise motion of the steering wheel is necessary. The feet should be located comfortably close to the brake pedal to assure maximum braking effort in case of any emergency. The driver should never be crowded by passengers to the extent that they might affect his control of the car. No prisoners should ever be transported at excessive speed except in case of extreme sickness or injury.

Civilians should not be transported for this tends to decrease the efficiency of the officer. While the two or more are conversing on subjects foreign

to the problems of traffic law enforcement, violators may pass unnoticed. If pursuit becomes necessary, there will be needless exposure to danger to the civilians who may not be covered by accident insurance. On the other hand, an officer may elect to pass up a flagrant violator because of his passenger. There are only four persons other than officers who should be transported in a pursuit car subject to Departmental regulations—a doctor or nurse in an emergency, a victim of an accident if ambulance is not available, and arrested persons. After the arrested person has been thoroughly searched, he should be seated in the right front seat. If he shows any signs of resistance, he should be handcuffed. At night the overhead light should be illuminated to permit the officer to observe the motion and acts of all prisoners.

When two or more prisoners are to be transported, two officers should transport them in a patrol car and the passenger officer should constantly watch the prisoners for possible resistance, assault, or escape action. The officers should avoid arguments and the intentional antagonizing of the prisoners. Normally, patience and a reasonable degree of tolerance by the officer will prevent any interference by the prisoners. Nevertheless, overt action toward the driver cannot safely be tolerated while the car is in motion.

CHAPTER II

HIGH SPEED PURSUIT OF VIOLATORS

A. Basic Needs or Qualifications

There are certain basic qualifications which must be met if a traffic law enforcement agency is to successfully apprehend violators in high speed pursuit without experiencing a high accident frequency rate with resultant deaths, injuries, and property losses.

To successfully apprehend hazardous moving violators, as well as other motor vehicle law violators, a traffic law enforcement agency must develop a high degree of skill in its drivers who are to be used for this purpose. It is, therefore, absolutely essential that these drivers be well-trained for this particular type of driving. By all means, the new and inexperienced traffic enforcement officer should be given considerable training before he is permitted to do extensive pursuit work.

In selecting potential pursuit officers, it is a good policy to select men who have had considerable experience in driving an automobile and who possess a record that is free of traffic violations and accidents. They should have good eyesight, that is 20-20 vision, normal depth perception, and normal color vision. They should have an attitude which lends itself to safe driving and improves with each adverse driving experience. They must constantly exercise good judgment as they drive. They must learn to perceive danger in a split second and respond correctly to any emergency which arises. They must have sufficient emotional stability to refrain from becoming angry if someone offends them on the highways. They should develop a thorough knowledge of the applicable laws with respect to motor vehicle operation, especially the safety laws. A thorough knowledge of the roads where pursuit will take place is imperative. If feasible, each officer should traverse every road in his assigned territory and learn the location of all sharp curves, blind intersections, stop signs, dangerous sections of roadway, etc., in order to be able to anticipate trouble and thus avoid unnecessary risks in driving. They should have or develop mechanical skill to the extent that it becomes natural for them to handle each control device without searching for it or having to recall what it should accomplish for them. The pursuit driver must have normal reactions. That is, after he sees an emergency he must instantly respond to the emergency and respond correctly. A thorough knowledge and ability to correctly respond to emergencies is essential.

A pursuit officer cannot be expected to do effective enforcement work without being equipped with an automobile which is safe, powerful, and has a top speed equivalent to the average car. It should be equipped with all safety equipment, including an approved and tested safety belt and padded dark green visors. Such special equipment may protect him from being killed or seriously injured.

B. A Hazardous Type of Driving

Pursuit driving must be classed as hazardous driving for several reasons. First, it requires the pursuit of all types of drivers. The pursuit driver seldom knows what type of driver he is chasing until the apprehension is made. At times, usually without advance notice or warning, the pursuit of felons becomes necessary. This type of driver, an automobile thief for example, may take any chance to escape, including passing on blind curves, hill crests, and in the face of on-coming traffic. He has no concern for other people and their safety and quite frequently he will force a motorist off the road if the maneuver will enhance his possibilities of escape. At times he will go so far as to deliberately attempt to wreck the pursuing officer. When apprehension seems imminent, he may even open fire on the pursuing officer. This type of driver can be expected to take advantage of any opportunity to help himself and hinder the officer, irrespective of the after effects. Moreover, should the officer be involved in an accident, the violator would not return to assist him, regardless of how drasticly needed his assistance might be. Pursuit of such drivers requires skill, discretion, and persistence if apprehension is to be accomplished. Road blocks may be needed to assure the apprehension of felons and should be utilized at strategic locations when sufficient personnel and equipment is available.

A drunken driver normally drives in an irresponsible manner, weaving along at the peril of every other motorist whom he meets and passes. At times, like the felon, and under certain circumstances, he may drive at top speed. His actions and reactions differ from that of an average felon, however, in that he may "lose himself" completely in a dangerous situation and collide with another vehicle without making any apparent effort to avoid an accident. A pursuit driver cannot afford to follow him too closely; for, if he should wreck, it might be impossible for the pursuit driver to avoid colliding with his vehicle. During pursuit an overhead flashing warning light and the siren should be used constantly to warn all other motorists of danger. Frequently, a drunken driver will slow down on running up behind a car which is moving slowly. It is possible that he may be slowed to a stop if he responds to his slowing action. This, however, involves an element of danger to the car and driver who attempts it. If the officer continues the pursuit, properly protecting himself and other motorists and pedestrians by using his warning devices, sooner or later the pursued vehicle driver will stop voluntarily or be involved in an accident. If he attempts flight on foot, the officer should be ready to give pursuit. It is a good practice for the officer to notify the nearest radio station of his location and arrange for assistance in case of physical or armed resistance.

Equipment violators do not call for the same effort or degree of risk during pursuit as other violators. Normally they may be located at a later date and no danger is imminent to the other highway users in most cases. Pursuit of violators who are not committing hazardous moving violations does not merit excessive speed in chase and unnecessary risks to the pursuing officer. It would be absurd for an officer to risk an accident while attempting to apprehend an improper license violator.

Depending upon the urgency of the situation, pursuit must be carried out under all types of adverse conditions. Rainstorms provide special hazards. Visibility is limited and, due to the condition of the surface of the road, the distance required for stopping is increased. Immediately after a drizzle or light rain, the surface of a paved road becomes excessively slippery because of the combination of water, oil, and grit on the road. Until this has been washed off by a hard rain, it is especially dangerous to travel upon.

During foggy weather visibility may be reduced drastically. Under such conditions, high beam headlights are of little value other than to warn other motorists of the position of the vehicle. Travel at any speed which necessitates more space to stop than is visible to the driver is dangerous. The alert driver will anticipate the distance needed for stopping, including his reaction time, and will govern his speed accordingly.

During the winter months there is always the danger of ice on the highways. High spots, especially bridges, may ice over in minutes, depending upon the temperature and humidity. Ice patches may linger on shady or protected areas long after the rest of the road has become clear. Travel under such circumstances can be fatal to unsuspecting motorists. Pursuit under such circumstances must be executed with caution. When general icing conditions exist, it will be necessary to drive with chains or other traction devices.

Pursuit of violators must be carried out over all types of roads and under all kinds of traffic conditions. An officer never knows where a chase will end. It may start on a super highway and end on a logging road or in a pine thicket. It may extend over straight highways into crooked, narrow mountain roads. It may extend to roads and lanes that the officer has never seen before. It may span well-marked highways to those with no warning signs or markings. The chase may start in a rural section and end on a main thoroughfare. It may lead through a school zone, a playground, a blind alley, or through traffic congested intersections at top speed. It may reverse directions and involve hit and run tactics on the violator's part.

A pursuing officer must constantly anticipate possible dangers, weigh the risks involved, and seek to serve the best cause. He will never delight in a failure. He cannot afford to needlessly endanger other people. He must plan a course of action during a pursuit designed to affect an eventual apprehension without endangering life or property.

The apprehension should be made by stopping the driver as soon as reasonably possible. No pursuit officer will take pride in apprehension of minor violators and in allowing the felon to go free. If identification is established, the arrest should be effected regardless of who wins the race, who is the better driver, or who has the faster car. Enforcement officers are engaged in the serious business of preventing loss of life and property and must never enter into unnecessary speed competition with other motorists.

In following a motorist who is deliberately attempting to elude a pursuit officer, or one who is unaware of any pursuit, the pursuit officer must be

alert if he is to avoid being separated from the driver he is pursuing. The pursuit driver cannot, and must not, assume that the violator will open a clear path of travel for his vehicle. Congested traffic has a tendency to close the gap behind the first car immediately just as water would settle about a car if it should plunge into it. In order to avoid being arrested many motorists will take chances in passing other vehicles. Regardless of the extenuating circumstances, the pursuit officer should not take such chances. Naturally, this will delay the driver of the pursuit car. The use of a siren and warning light may or may not serve to open a clear path. The elusive driver may collide with some vehicle in his effort to avoid apprehension; therefore, he cannot be followed closely, lest the officer become involved in a collision. This type of violator oftentimes may be drunk or under the influence of narcotic drugs. Pursuit must always be flavored with common sense and foresight of likely incidents based on chances being taken. Again, the fleeing driver may be young or inexperienced and for a time his luck may hold out. The officer must constantly avoid any collision with the violator's car. Self-preservation and consideration of other people's safety are necessary essentials in any pursuit driving. Danger of colliding almost invariably increases with increased speed, thus increasing the danger of death or serious personal injury. Chances of avoiding collision are lessened, braking distance is lengthened, and range of vision in high speed driving is reduced materially.

High speed driving in apprehension of violators invites criticism from citizens, taxpayers, and other highway users. The least that an officer can expect from a personal collision would be property damage to his vehicle and it may involve injury or even death to himself or others. In the end, it is better to lose an occasional race than to risk lives or the officer's reputation just to apprehend one motorist who can probably be apprehended at a later date. Time and again experience has proven this fact. The obvious result of a collision is the necessary delay in repairing this important piece of equipment and possibly the loss of the life or services of the officer whether it be permanent or temporary.

It is impossible to always anticipate emergencies which may develop on the highway ahead, especially at high speed. An alert officer will constantly be on the lookout for pedestrians and uninformed or innocent motorists who may enter the route of travel of a violator being pursued. Warning devices serve a useful purpose under such circumstances, but even though they be used, people may fail to hear them due to closed windows, abstractions, or inattentiveness. Ninety-five per cent may yield the right-of-way, but any one of the remaining five per cent could cause a fatal or serious accident.

High speed pursuit may be justified in certain circumstances; for example, in the apprehension of a driver who is imperilling the lives of motorists or pedestrians through negligent or dangerous operation. He may be a bank robber, an escaped prisoner, a hit and run driver, a car thief, a drunken driver, or a kidnapper. All of these merit every reasonable cooperative effort to apprehend short of endangering other people. When such offenders are

being pursued, however, available assistance should be secured if possible. Many times such assistance is not strategically located nor readily available and the officer must rely solely on his own resources. A kidnapper or bank robber, accompanied by a victim or hostage, would merit no protection except as use of force would endanger the victim or hostage in his vehicle. If it is likely that an offender of lesser importance could be picked up later, the officer must decide on the more practical course of hot pursuit at the peril of highway users as well as himself or positive identification of the driver and service of a warrant under more favorable conditions. The normal tendency is to apprehend the offender at any cost.

Most violators merit only moderate speed pursuit for usually they can be located later. Actually they may not be engaged in anything especially dangerous at the time. The discreet officer cannot afford to take undue risks to overtake a motorist whose only violation is, for example, a defective muffler or a registration violation. Violators who commit hazardous moving violations such as running a stop sign, failing to yield right-of-way, or failing to signal for a left or right turn merit stopping; but, if, after the violation is completed, the violator resumes comparatively safe operation, it would be unwise to take undue chances to overtake. The young and inexperienced pursuit driver, once he has detected a violation, has some tendency to forget everything in his effort to bring about a speedy apprehension. This is not always practical or safe because of traffic density or other complications of pursuit.

C. Identification of Car and Driver

In the pursuit of violators, one of the first duties of the officer is to identify the driver and the vehicle as soon as possible. The vehicle should be identified by year, model, make, body type, color, and license number. Such identification is very significant and important, particularly if high speed pursuit ensues. If the violator is traveling in the opposite direction when observed, it is wise to make as complete an identification as possible for later use. It is not always possible to get all of this information, but an effort should be made to obtain as complete information as possible. Limited information is better than none at all. Correct information will assure that the right car is stopped and not some similar vehicle. It will prevent errors being made and possible embarrassment to the officer.

The peculiar features of a car make positive identification possible and easy—a defective or damaged fender would assure positive identification. Accessories also make identification easier. An officer should practice looking carefully at a driver for a general description as to color, age, head gear (hat or cap), and type and color of clothing. For example, two teenage boys in the front seat could easily, at an opportune moment, reverse positions, but if one of the two was wearing a green-checked shirt as compared with a white one worn by his companion, it is unlikely that the driving position could be changed and shirts exchanged in time to avoid identification. Many drivers license violations can be detected if close

attention is paid to the characteristics of the driver when he is first met on the highway by the enforcement officer.

D. Possible Courses of Action of Fleeing Drivers

There are at least five possible courses of action on the part of an irresponsible driver. First, he may attempt to out-distance the pursuing officer. He may run red signal lights, pass in intersections, on blind curves, hill crests, and in the face of oncoming traffic. If he keeps going without colliding with another vehicle or some other object, it is possible that assistance may be secured by radio to assure his arrest if the pursuing officer has first identified the vehicle and driver and can keep apace sufficiently to notify the assisting officer of the route of travel. Keeping apace must not supersede safety precautions vital to personal safety to the officer and general public. Frequently, a driver who has out-distanced one officer, will, as he encounters another, drive in a safe manner and stop without difficulty. Positive identification then becomes possible when the motorist is interviewed by the original pursuing officer. The procurement of a warrant prerequisite to arrest may be necessary, but eventually trial of the offender is assured.

On the other hand, an offending motorist may, after he encounters a traffic officer, exchange places with a passenger after he has crossed a hill top, rounded a blind curve, or even while driving along at a normal rate of speed. Positive identification at the beginning prevents the evasion of responsibility for criminal actions—such as driving after license has been revoked. Frequently, a driver will slow down after the change is made and bitterly deny the exchange of drivers.

Often a violator, after meeting an officer, will attempt to "lose" the officer by turning into a side street, driving over a dusty road, or by weaving in and out of traffic sufficiently to confuse the pursuing officer as to which vehicle he had met among several similar vehicles. The habitual violator may in some cases have stop lights disconnected and may even turn his headlights off at night in passing other cars in an effort to confuse or lose the pursuing officer.

A sudden turn into a blind road with lights off at night is extremely difficult to detect in a normal flow of traffic and the officer must be alert to such action. If the pursuit officer watches closely every side road he passes for scuffed tire marks or for dust he may detect the fact that the pursued driver has altered his course. If the stop lights of the fleeing car are operating, the officer can anticipate most of these deliberate efforts to throw him off the track. On other occasions, offenders may elect to abandon the car and flee on foot. In case this occurs, the pursuit officer should perform, in the order listed, the following things before giving foot pursuit:

(1) Remove his ignition keys;
(2) Check the violator car for other occupants who might drive it away; and
(3) Remove the ignition keys to prevent the violator's car from being driven off.

There is no reason why the violator who runs on the highway should be immediately pursued on foot. The best policy is to return to the pursuit car and drive as close to the offender as possible before exerting any physical effort. Any person who flees on foot or in a car must be considered more dangerous than an average offender and precautions must be taken when he is overtaken to assure that this person does not gain an advantage through the use of force or a deadly weapon. The arresting officer should always be prepared to defend himself when such circumstances present themselves.

Often motorists attempt to out-distance an officer and after they realize that apprehension is imminent, they stop and submit to arrest in a normal manner. The extent of flight only covers the time and space which is needed by the officer to get in position to pursue. Usually, if the offender is speeding, he will slow down to avoid being clocked. He often pleads not guilty or excuses his original action with some alibi.

E. Some Suggestions for Safety in Pursuit

During pursuit, warning devices should be used to warn other people on the highway of your presence, your speed, and the danger which exists some distance from you in the form of a dangerous violator. Most people will heed the warning in time to get out of the way of the pursuing officer. This will secure the maximum degree of protection possible for everyone concerned. The officer's ability to supervise or control other motorists by the nature of existing circumstances will be limited, but it is his duty to avoid unduly contributing to the danger already created by the violating motorist.

The use of both siren and flasher light is imperative in urban areas. On the outskirts of towns and cities the personal supervision of pedestrians and motorists is hardly comparable to that in cities. The speed limits may be higher and the tendency of people may be to move and drive with less feeling of restraint than in downtown areas. Headlong flight and close pursuit in densely populated and congested areas can result in disaster for either or both drivers.

The use of warning devices provides some degree of protection to the officer from a criminal and civil standpoint if he should be involved in a collision. If the involved motorist heard the siren or saw the flasher light, he is required by the law to pull to the right and stop. Thus, in using these devices the burden may be shifted to some degree to the other driver. It will not relieve, however, the pursuit driver from the consequences of a willful disregard of the rights and safety of others.

The pacing of motorists to obtain a clock of their speed need not be accompanied by a sounding siren and a flashing light, except as it is necessary to assure safety in controlling or warning other motorists and pedestrians. Very few speeders would be clocked if it were necessary to use warning devices when clocking all speeds in excess of stated limits.

The siren, to be most effective, must be cut on and off to avoid an extremely high pitch sound which does not carry an appreciable distance.

At best, it becomes difficult to hear a siren if car windows are closed, if conversations are going on, or if a radio is operating. Other existent road noises, such as those peculiar to heavy vehicles, tend to drown-out the sound of a siren to some extent.

The maximum results of a full blast of the siren can be expected when the officer's vehicle is being operated at a slow rate of speed. The warning effect of the siren will decrease rapidly as the speed of the pursuit vehicle increases. At 90 miles per hour, for example, or 132 feet per second, the warning effect to clear a route for travel may be reduced almost to zero since it takes time, distance, and space for people to move out of a vehicle's route of travel. The use of a siren in the right lane on a four-lane highway can be dangerous. For example, if there is traffic in the left-hand lane ahead, use of a siren could result in a collision as a motorist in the left-hand lane could fail to locate the pursuit car and steer suddenly toward the right lane in order to leave the left-hand or passing lane open for the pursuit vehicle. In his effort to cooperate, the motorist may fail to signal for a right-turn and, thereby, become, together with the pursuit officer, an accident victim. Even if he should signal for a right-turn, the pursuit officer may not be in a position to see his signal or, if he does see it, may be unable to avoid a collision.

A pursuit driver should learn to concentrate on driving safely and expertly. At the same time he must keep the violating motorist in constant view. He must recognize that a large per cent (according to the opinion of most experts) of all collisions are the result of inattention on the part of drivers and pedestrians and develop the habit of devoting his full attention to the operation of his vehicle and the associated duties of observing and apprehending motorists. Pursuit driving is a full time job. Even momentary inattention may result in a death or serious injury. A pursuit driver should constantly anticipate traffic conditions in advance (several hundred feet ahead) to avoid the possibility of colliding with other motorists or pedestrians. If he should see a side road on the left ahead, he should anticipate the possibility of traffic entering his path from the side road as he approaches the intersection, or a vehicle ahead of him, and between him and the vehicle he is pursuing turning left to enter the side road as he attempts to pass. Each such possibility must be planned for in advance.

During the pursuit every possible course of action open to the violator must be studied and anticipated. Pulling alongside the pursued vehicle just before reaching a side road could easily result in the violator deliberately steering to the left just as the pursuit officer gets even with him or too far advanced to follow his route if he should turn to the right without stopping, backing-up, and starting again. Valuable time can be lost in this delayed action. Some motorists will deliberately and suddenly apply the brake in an effort to wreck a pursuit car. Other offenders may swerve suddenly to the left to force the pursuing officer off the road. This, of course, is the exception rather than the rule, but an alert officer cannot risk the possibility of such action on the part of the offender.

In the pursuit of violators, an officer should select the traffic lane which

is normally fastest. At intersections he must avoid getting bottled-up behind traffic turning left or right or stopped to yield the right-of-way to other cars. A violator may weave in-and-out and run past red lights in order to gain an advantage. An alert and aggressive officer should anticipate such bottlenecks and alter his lane position as it becomes necessary. If it becomes expedient to run past red lights, he must be certain that the life of no motorist or pedestrian will be endangered by his doing so. He has no legal authority to take such action and it may involve personal and financial risk if he damages any vehicle, driver, passenger, or pedestrian. He should watch signal lights constantly and when practicable, gauge his speed to match the light's changing. Syncronizing his speed with the traffic lights will permit him to maintain a constant rate of speed and will give him an advantage over less experienced drivers. He must watch each exit (side streets and alleys) for the vehicle if it is momentarily lost to his view, for most drivers hope to evade arrest without prolonged flight on a main thoroughfare lest they encounter other officers or road blocks. Decisions to pursue and decisions to turn right or left in pursuit of violators should be made promptly since time is vitally important in preventing escape. A one-half minute delay would result in a car being one mile away if both cars were being driven 60 miles an hour in opposite directions; and one-half mile if each was travelling at 30 miles per hour.

Because of the many handicaps he encounters, the pursuit officer must recognize and accept the fact that he will not be able to successfully apprehend every motorist he decides to stop. Traffic at times is so congested that turning is not possible without a delay of some seconds or even minutes after the offender is first noticed. Many go unnoticed, of course, by the officer during the time he is on patrol. Others conform to safe driving rules during the time they are in the vicinity of the officer and others have the odds in their favor in the traffic pattern. This advantage may work both ways.

The change from civilian driving to pursuit driving requires many adjustments in habits, attitudes, and practices. Pursuit driving should be considered in two separate and distinct phases. First, there is the routine procedure of cruising to observe traffic and to detect offenders. This phase of pursuit driving should be executed in a manner that the officer will set a good example for other drivers. The second phase, pursuit and apprehension of violators, inasmuch as it must by necessity, in most cases, be executed at high speeds, requires training and adjustment in normal driving skills and techniques. An officer may be outstanding in either capacity as a driver. He should, however, be satisfactory in both capacities if he serves a useful purpose in traffic enforcement and highway safety. As a civilian, he may have driven a laundry truck, a delivery vehicle, or any one of many types of vehicles. His major interest may have been along lines entirely foreign to pursuit driving or traffic law enforcement. He may have driven oblivious to violations or he may have had some unsafe habits which should be corrected especially as he becomes an enforcement officer.

Rarely does a driver enter the field of pursuit driving with any appreciable pursuit driving experience gained from some other vocation. The driver of a commercial vehicle may be able to handle one type of vehicle with skill, but this skill is hardly adaptable to pursuit driving. The speed of travel will normally be far greater, except perhaps for a former race-track driver. In pursuit driving there are numerous unknown hazards not experienced even on a race-track. If a young pursuit driver follows safe driving practices set up by his department and has the benefit of a course in this type of driving, he should, within a few months, develop into a satisfactory driver. He must not, however, become egotistical and feel that he has mastered the art. Such overconfidence can lead to disaster.

The habit of taking chances should not be developed. Sooner or later this habit leads to traffic accidents, adverse criticism, and poor public relations. The enforcement officer will do well to determine in advance which highway surfaces are safest for high speeds, which are relatively unsafe, and profit by the experience of other drivers. The modern concrete highway is in all probability the safest highway for high speed travel. The engineering design is desirable. It is sufficiently wide. Curves are elevated and consistently graded so that the degree of turn is regular. It is free of many deficiencies common to other roads. Signs and markings are adequate to keep the driver from running into trouble innocently. Sustained speeds are usually contingent on traffic volume. From the standpoint of roadway, signs and markings, pursuit driving should be safest on this type of road. However, because of unusual high speed operation on such roads, it may not be safe for pursuit.

The modern asphalt highway is probably the second safest highway from the standpoint of engineering design and traction. The fine sand asphalt surface lends itself to good traction. The width of the road is normally adequate and curves are elevated and gradual. Signs and markings are sufficient to warn the driver of danger ahead. There are few defects, and sustained high speeds within posted limits are practical.

The asphalt roads built some years ago have fair engineering design but the surface at times and under certain circumstances is slick. Traction may become poor, especially in damp or wet weather. The elevation on curves and the arc of the curves may not be gradual and consistent. Curves which are gradual in the beginning may become acute. This invites sharp braking which is always dangerous. The width may not be adequate and the high crown in the center on curves may make it extremely difficult and dangerous to traverse, especially if the driver has to ride the outside of the curve. Frequently, these old roads develop defects which have to be repaired. Almost invariably oil paths have developed on uphill lanes. In wet weather, this film of oil and dust can be exceedingly slippery. Roads which glisten in the sun or rain require additional caution in damp or wet weather. In most cases, the pursuit driver will be exposed to this type of road quite frequently. Naturally, they are not as safe as the more modern highways.

The old concrete highway, 16 to 18 feet wide, with a high crown is not as safe as the more modern highways. Engineering-wise, it is not designed for sustained high speeds. Its traction is poor, especially in patched places. In wet weather it may be dangerous.

The asphalt road, with large stone base, built many years ago is even more dangerous because of obsolete engineering design, poor traction, high crowns and inadequate construction, and engineering of curves. Many years of use by heavy traffic has caused defects to develop, many repairs have been made, and oily spots are prevalent to add to the danger in wet weather driving.

Dirt and gravel roads are not comparable with modern hard-surfaced roads. Their engineering design is bad. Traction is poor because of loose material on the surface. Often their width is sufficient only for one vehicle to travel conveniently and safely. Moreover, during rainy seasons, low spots develop into holes and increase the danger of accidents as well as adding to the inconvenience and discomfort of motorists who find it necessary to travel such roads. Sustained high speed is neither practical nor safe.

Many of these roads are dusty in dry weather and the view of the road at places is obstructed due to curves and hill crests. These obstructions do not lend themselves to safety for the pursuit officer. One lane roads call for a high degree of skill on the part of the pursuit driver for often in pursuit he may meet a car and be blinded by dust momentarily. Often this type of road has defects which are unnoticeable except at very close range. The pursuit officer does not have occasion to patrol these roads as often as the main arterial roads and his knowledge of curves, hills, and other obstacles is often limited. He has no assurance that the car he is pursuing will not run off the road and overturn or collide with some vehicle or object. It is conceivable that in traversing a blind curve, the offender may collide with an oncoming car and the two in wrecking will block the entire roadway. Close following under such circumstances makes a three car collision inevitable.

A pursuit driver must choose between following closely or taking the chance of falling back out of the stream of dust and radioing for assistance. Occasionally, it is possible to follow a vehicle closely and avoid the dust stream on either side, but the element of risk in following closely is great and, if the front car wrecks or runs off the road, the pursuit driver will almost invariably do the same. It is common practice on the part of a local "speed demon" to lead an officer for a chase on a road which is known to him and strange or unknown to the officer. This gives him a peculiar advantage for he may know the top speed as well as the location of each curve on the road. Not only will the officer be at a driving disadvantage, he will also be at a decided disadvantage in that he may be led into a curve at a speed that makes it practically impossible for him to successfully traverse it. In such cases, personal safety must take precedence over the desire to apprehend the violator.

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F. Following Vehicles

The practice of following several vehicles which are running "close up" is dangerous in normal driving and doubly so in high speed pursuit because the plans and intentions of the several drivers are unknown to the officer. This danger is increased considerably where side roads leading off the highway provide alternate routes of travel. If the front driver in a line of five vehicles elects to stop on the highway to discharge a passenger and signals 100 feet in advance, the second driver will have ample time to stop but may only have time to signal for fifty feet. By the time this process has been repeated four times, the driver of the fifth vehicle will in all probability strike the rear of the vehicle in front of him before he can apply the brakes. Obstructions may be present or entry of a vehicle or person into the highway may be hidden to several of the drivers. For example, a dog entering from a narrow shoulder, may cause the front vehicle to stop quickly to avoid striking it. The stopping distance for each driver becomes progressively shorter in length of time and travel distance. Usually the rear driver will have to assume responsibility for damage done.

Following trucks and tractor-trailers is especially dangerous, for the bumper and front of the car provide no protection to the driver in case it should run into or under the back of a truck. The windshield and top will probably take the burden of the impact. Whenever a driver is following five other drivers, six different concepts of driving and six different techniques of operation are existant, and it is dangerous to follow closely behind these drivers. If the pursuit driver can stay just to the right of the center line and see ahead of all vehicles, he may be able to foresee possible dangers and in the event of a sudden emergency, he may stop or steer to the side—preferably to the left if that side is clear.

G. Traversing Sharp Curves

The ability of a person to traverse a sharp curve safely is dependent upon several factors. First, a knowledge of the physical layout of the curve is most desirable in that the top safe speed can be pre-determined. The elevation should be known as well as the degree of grade. Secondly, it is important to know whether a curve has an upward or downward slope. Thirdly, thorough knowledge of the pursuit vehicle and its maneuverability in a curve is imperative. Fourth, the driver must have an established safe technique in traversing a curve or be able to follow a safe plan of vehicle operation.

All braking for a curve should be accomplished prior to actual entry into the curve for maximum safety. If the curve location is known, braking can be accomplished well in advance. In normal driving, it should not be necessary. Riding the brake pedal will result in excessive heat on the brake bands and a possible fading action of the brakes. If all necessary braking is done prior to the entry into the curve, acceleration may be carried out throughout the entire process of traversing the curve. The practice of steering to the left of center is dangerous for either left or right curves, because of the

possibility of meeting other motorists. Sudden sharp turning in a sharp curve is always dangerous. In traveling around a left hand curve, it is safer to remain just to the right side of the center line. This location assures that there will be 4 to 6 feet of "leeway" on the right available for "drifting" if it is necessary to steer to the right to avoid a collision. If the shoulder is available and usable, it may be used as a last resort. Inside travel on a sharp curve increases the amount of centrifugal force acting upon the car and increases the possibility of head-on collisions in left-hand curves or sideswipe accidents with vehicles approaching from the opposite direction. A sudden steering to the right in a left curve puts an automobile into a terrific strain. A tire may blow out, a shock absorber or stabilizer may break, or traction may be lost resulting in loss of control of the vehicle.

When a car begins creeping toward the center in a right curve or toward the edge in a left curve, it is usually because of excessive speed. When this occurs, acceleration must be decreased and the vehicle should be allowed to drift in the direction of the "creeping" movement in order to allow time for regaining traction. If there is a marginal space reserved for this purpose, it can be used to decrease the arc of the curve and the centrifugal force. If the rear wheels begin sliding, it is best to steer in the direction of the slide and accelerate slightly in order to regain traction. The driver should avoid applying the brakes during a skid for this has a tendency to increase the skidding action. It may cause him to lose complete control of his vehicle.

In traversing curves, the reaction time of a driver is extremely important. Not only must the driver react instantly to emergencies, but he must react correctly. He must do the right thing at the right time. The time and distance required for correction of an error make it almost impossible to avoid a collision if something goes wrong. If an emergency should arise on a curve with a driver traveling at a high rate of speed, it is unlikely that he would be able to respond correctly in sufficient time to avoid disaster.

A safe driver avoids trouble by always being alert and discreet. If he knows the road, especially the curves, he will gain appreciably in safety and in expeditious pursuit. The mere fact that he knows a curve does not guarantee safe travel but it assures that if no obstacles appear in the curve and nothing goes wrong with his vehicle he should be able to traverse it safely. If the driver sees loose material on the surface of a curve, he should, whenever possible, plan for the car to travel in a straight line through this area. He may merely decrease his pull on the steering wheel to allow his car to drift through and, after he has passed over the loose material, it will be safe for him to again increase the pull on the wheel. When traveling at a high rate of speed, it is invariably better to roll a car than to strike a solid object. Very few drivers survive head-on collisions at high speeds. If there is no chance to avoid a collision, braking to the maximum degree will dissipate part of the speed, thus reducing the force of impact which in turn will reduce the possibility of death, personal injury, and

property damage. A "roll overturn" in undergrowth would lessen the danger of death and personal injury and minimize possible property damage.

If the pursuit car should leave the hard surfaced roadway through error of the driver, he must avoid braking for it may result in loss of control. The correct method for regaining control is to gradually decrease acceleration and then, as reduced speed permits, shift to a lower gear to slow the speed of the vehicle to the point that it can be controlled. Re-entry to the surface of the road should not be attempted until the car has slowed sufficiently to allow complete control by the driver. When this has been accomplished, re-entry should be accomplished at a 30 to 45 degree angle with the surface.

H. Passing Motorists

In passing motorists proceeding in the same direction, the driver of a pursuit vehicle must constantly scan the area adjacent to the left of the highway for possible exit points. If side roads constitute intersections, he must not and cannot legally pass. Distinct and audible signals for passing should be given before passing is undertaken. A driver about to be passed may swing left of center for a right turn into a side road. Such action could result in a collision. In pursuit, the driver will endeavor to retain his speed, if possible, while passing another motorist. It is better to slow down by ten miles per hour in the process of approaching a vehicle that is to be passed than to wait and have to slow down 20 miles per hour or more. Once speed is lost, it takes considerable time to regain it. At normal driving speeds, speed can be reduced 10 miles per hour per second by braking. It may take one second to increase speed by two miles per hour. Abrupt braking is dangerous in that brake bands may heat and the braking effect may "fade" away. The car may swerve to right or left if the braking mechanism is out of adjustment. Sudden swerving could easily result in loss of control. Pumping of the brakes gradually, well in advance, is a safer method with certain types of braking systems. If the left foot is used for braking, some time may be gained in reaction time for acceleration after braking. If the brake bands are exposed to water, they should be tested immediately, before any emergency arises.

It is unsafe to cut in sharply after passing another motorist. It is unlawful as well as unfair to the driver. In addition to the danger element it creates, it puts the car in an unnecessary strain and invites criticism.

I. Acceleration

When pursuit driving is anticipated, it is a good policy to keep the engine warm. High speeds with a cold engine should be avoided lest the engine be damaged. In normal pursuit using manual shift automobiles, it is not necessary to accelerate to a maximum speed in low and second gears. This practice, moreover, shortens the life of the engine and increases its cost of upkeep.

In urban areas, for fast acceleration with standard gear shift cars, second gear should be used. Second gear should also be used on crooked roads and in order to provide faster acceleration and greater control in slowing down for dangerous intersections or curves. When traversing sharp curves, maximum speed can be regained much more quickly in second gear than in high gear. Constant changing of gears, however, detracts from driving ability and should be avoided.

Either hand or foot, depending on siren switch location, should be left free for operation of the siren. If it requires the use of one hand, it should be executed with caution; thus, allowing the use of both hands on the steering wheel as much as possible. The practice of spinning wheels on take-off serves no good purpose except to arouse the curiosity and possible antagonism of the public. There is no propulsion such as exists in the breech of a gun to push a car into space at a terrific speed by maximum acceleration. From the standpoint of economy, it is expensive and unnecessary. Inexperienced drivers and "show-offs," however, take delight in it. Experienced drivers arrive at their destinations more quickly and make a very difficult task appear easy just as the firearms expert does in firing consistently into the center of the target.

J. Avoid Stopping Motorists on Hill, Curves, and Intersections

In every case, the stopping of a motorist must be executed so that both cars completely clear the highway. If the motorist parks partially on the highway, the pursuit car should be pulled off and the motorist should be directed to move his vehicle off also. Traffic cannot safely be routed to the left of the center line, especially near a blind curve, near a hill crest, or at or near an intersection. Vehicles approaching from the opposite direction may collide with a vehicle which is routed across the center line. The officer should remember that it is his responsibility to protect the lives of other motorists and thus avoid setting-up conditions that may contribute to an accident. It is possible that a motorist might approach a partially blocked road, apply his brakes suddenly, and even wreck in a moment of fright and loss of control. Excuses will not suffice to explain away irresponsible action. The correct procedure for stopping motorists must be practiced at all times.

K. High Speed Escort

The only good and sufficient reason for high speed escort is in a real effort to save lives. There are certain instances such as the following, which may justify speed in excess of posted limits to save a life: (1) a suffocating person requires immediate medical treatment; (2) a person who is bleeding profusely, which bleeding cannot be stopped by application of a tourniquet, must have medical attention as soon as possible by a doctor; (3) a severely burned person should receive prompt medical attention; and (4) a person in severe shock should be treated immediately. In these instances high speed escort may be justified.

Most medical authorities agree that expectant mothers should not be considered emergency cases. The practice of delivering dignitaries to their destinations in disregard of safety cannot be justified or excused. Escort of ambulances at high speed serves no good purpose, except in the above emergencies, and only then provided the driver does not know the way to his destination. It is always preferable for the ambulance driver to proceed alone when he knows his way. One vehicle traveling under emergency conditions creates considerable less traffic hazard than two or more vehicles traveling in company with one another.

L. Reduced Visibility

A pursuit officer, through necessity, must engage in both pursuit and normal driving under reduced visibility conditions. Rain, snow, fog, smoke, sleet, or hail may reduce the range of his vision. The only safe course to follow is to reduce speed to a point where it is possible to stop within the visible clear roadway distance ahead. Any operation during day or night which ignores this rule exposes the driver to needless danger. At sixty miles per hour, he should have at least three hundred or more feet of clearly visible stopping space ahead.

Normally, at night, speed should be reduced by 10 to 15 miles per hour. Many pedestrians are clad in dark clothing and are very difficult to see, especially with glaring lights shining adjacent to the highway. The pursuit driver should avoid looking into glaring headlights as well as avoid being distracted by many colored signs and advertisements. Properly focused headlights should render objects clearly discernable on the roadway ahead 200 feet or more at night.

M. Use of Force in Pursuit

Usually the state laws permit an officer to use sufficient force to effect an arrest. The practice of bumping cars is dangerous and if extreme measure is resorted to, the pursuit driver should most certainly use discretion in employing this method of making an arrest. It is very doubtful that this maneuver could be justified except in cases where it is obvious that the driver of the car to be bumped represents an extreme hazard to other highway users or has demonstrated an intent to kill. Normally, the subject can be apprehended eventually. Any bumping maneuver involves some risk to the officer and to his car. It is much safer to sound the siren, use blinker light, shine the spotlight, and radio for assistance while following at a reasonable distance.

The practice of shooting tires is illegal and extremely dangerous. This practice must never be resorted to except to prevent the escape of a dangerous felon. Bullets fired at a violator motorist have ricocheted and injured motorists or pedestrians needlessly. Furthermore, the officer may well be indicted for such actions. Bullets carelessly fired have been known to kill innocent people. In some cases, the innocent victim was located a

considerable distance away. Patience in pursuit will pay dividends to the persevering and discreet officer. He must constantly realize that his reputation is at stake and conduct himself in his pursuit car in a manner above reproach.

Allocation of Time

Classroom Lecture .....3 hours

CHAPTER III

STOPPING MOTORISTS (ELEMENTARY)

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each group of eight students.

B. One car for each two students.

C. Physical layout for demonstration and practice driving.
   (1) One mile stretch of lightly traveled hard surfaced highway.
   (2) Parking area adjacent to and near the middle of the one mile stretch of roadway.

D. Supplies
   (1) Grading pad.
   (2) Two "Caution-Training Area" signs.

II. *Classroom Program*

A. Outline of objectives.
   (1) To develop standard techniques in stopping motorists.
   (2) To develop skill in stopping motorists.
   (3) To observe and correct student errors.
   (4) To acquaint students with errors commonly made by officers in stopping motorists.
   (5) To impress each student with the need and desirability of safe driving practices in stopping motorists and in other pursuit driving maneuvers.
   (6) To grade student performances on basis of efficiency of operation and safety precautions observed.

B. Subject Discussion.

Stopping Motorists

(1) *Motorists' Safety*

The primary concern of a pursuit officer is the safety of the motorist to be stopped and particular care must be taken to ensure that the safety of the motorist and his passengers is not endangered by any action of the pursuit officer. For example, restraint must be used in the operation of horn and siren since a sudden, unnecessary, or excessive use of either may startle an unsuspecting motorist and cause him to lose control of his vehicle.

Many motorists have been licensed to drive who are naturally nervous, high-strung, or emotionally unstable to some degree. They may not respond correctly to warnings or directions given them. Women in particular, especially at

night, may refuse to stop out of fear that they are the victim of a hold-up attempt.

Correct actions by the pursuit officer will minimize these possibilities. For example, during daylight hours, when approaching an ordinary traffic violator from the rear, a pursuit officer should use the red blinker light to attract the motorist's attention, pull alongside if necessary and indicate to the motorist that he is to stop and where he is to stop. If this fails to attract the motorist's attention, the siren or horn can be used. The blinking red light is also effective in attracting the attention of approaching motorists who are to be stopped. In addition, it identifies the automobile as either a police car or an emergency vehicle.

In stopping a motorist the safety of the operation must take precedence over the speed of the operation. This means that care must be taken to select a spot where a stop may be made with safety. Where such a place is not readily available, the stopping must be delayed until a suitable place is found. Whenever possible, a spot should be selected that will permit the motorist and the pursuit car to stop completely off the traveled roadway. In no instance should a motorist be stopped at or near the crest of a hill, the point of a blind curve, or in or near intersections or congested areas.

(2) *Safety of General Public*

In addition to being concerned with the safety of the motorist being stopped, a pursuit driver must concern himself with the safety of other motorists and pedestrians who may be affected by his actions. He must take all necessary precautions to assure their safety. The fact that he is an officer in uniform driving a police car with flashing red light and siren sounding gives him no right, legally or morally, to force other highway users off the road or otherwise endanger them.

The actions of a pursuit officer may also affect a driver who is following him. It is, therefore, necessary to acquaint him with the officer's intended actions. For example, before pulling into the passing lane preparatory to pulling abreast of the motorist to be stopped and before actually stopping a motorist, the proper signals for a left turn, or a stop as the case may be, must be given, and must be given soon enough to permit the following motorist to adjust his driving to the intended maneuver of the officer. If the following motorist is in the process of passing, or has signified an intent to pass, the pursuit officer should wait until this maneuver has been completed before proceeding with the stop. As a further protection to following motorists, stops should not be made on or near hill crests or blind curves.

(3) *Safety of the Officer*

The safety of a pursuit officer is also of vital importance—to himself and to other users of the highways. It is his duty to expedite the safe and efficient flow of traffic, and this he cannot do from a hospital bed or a funeral bier. In order to protect himself as well as the other users of the highways, he should take the following precautions: (1) avoid stopping motorists on high speed highways unless both vehicles can be removed entirely from the road to a safe parking area; (2) if a safe, off-the-road parking area cannot be found and a motorist must be stopped on the roadway, select a spot away from the crest of a hill or the point of a curve in plain view of approaching traffic; (3) keep a close watch on the driver to be stopped for slowing or other change of speed, stopping, or turning; (4) park six to ten feet to the rear of the motorist and approximately three feet to his left to provide himself with a three-foot safety zone to occupy while he contacts the driver, (5) keep engine idling until fully satisfied that motorist will not drive off; and (6) maintain six feet of shoulder to the left of motorist for maximum safety.

(4) *Standard Stopping Procedure (Refer Exhibit 1, page 81)*

Standard stopping procedures require safe practices at all times. For example, prior to over-taking a car, a pursuit officer should maintain a safe distance between the pursuit car and the car being followed. Experience shows that when following another car one should maintain approximately one car length behind for each 10 miles an hour of speed. An easy way to remember this rule is that the following distance in feet should be twice the speed.

Before attempting to stop a motorist, and while maintaining a safe followng distance, a pursuit officer should select a safe stopping spot at least 500 to 600 feet ahead. After selecting a safe stopping spot, he should check traffic to the front and the rear, and traffic permitting, signal for a left turn, and move into the left traffic lane, in the meantime increasing his speed by 5 to 7 miles per hour, and turn on the red blinker light. He should then pull alongside until his front bumper is even with the left door of the overtaken car. When this position has been reached, the speed of the pursuit car should be reduced to that of the motorist, and maintained until the attention of the motorist has been gained. If the motorist's attention cannot be gained by the presence of the pursuit car alongside and by the use of the red blinker light, the horn or siren should be used. When the motorist's atten-

tion has been gained, the officer should indicate that the motorist should stop in the spot previously selected; at this point, approximately 200 to 250 feet ahead. If the motorist to be stopped is exceeding a speed of 50 mph, the spot where the motorist is to stop should be approximately 300 feet ahead. When it is apparent that the motorist understands that he is to stop in the area indicated, and that he is, in fact, going to stop, the pursuit officer should apply his brakes and begin to decrease speed preparatory to stopping.

When signalled to stop by a police officer, most motorists will comply by stopping in the area designated. Meanwhile, however, the pursuit officer should retain his position in the left lane to the rear of the motorist and remain alert for abrupt stopping or acceleration movements. As the motorist slows to a halt, the pursuit officer should slow down also, retaining enough momentum, however, to leave the pavement and park to the rear and slightly to the left of the parked motorist. He cannot afford to leave the pavement at a high rate of speed for this could result in his losing control of his vehicle, smashing into the parked vehicle, or otherwise endangering himself and the passengers in the parked vehicle. After the stop has been made, the engine of the pursuit car should be left running until it is obvious that the motorist has no intention of seeking to escape. Then if the motorist seeks to escape, immediate pursuit may be given.

Where no attempt is made by the motorist to escape, the pursuit officer should make an exit from the patrol car in the manner set forth in Chapter VIII and proceed with the contact.

Where pursuit is necessary, other users of the highways must be warned that a pursuit is in progress. This calls for use of both the flashing red light and the siren on the pursuit car. During such pursuit, the officer must guard against a tendency to follow too closely since he cannot anticipate the possible actions of the motorist.

When an escape attempt is made, the pursuit officer should immediately radio for assistance and give a full description of the fleeing car, including the license number, its location, and direction of flight. The license number should have been obtained while following the motorist preparatory to directing him to stop. If, on the other hand, the motorist does not try to escape, the officer should safely exit from his car by first checking the rear traffic and then backing out from the driver seat with door opened half way only. *(Refer Exhibit 2, page 82)* He should keep his eyes on the motorist's car until he has reached the driver and has looked over the occupants of the car for signs of resistance.

If it is necessary to converse extensively with the driver, it should be done at the right front of the patrol car for maximum safety.

If another officer is accompanying the pursuit driver, he can serve a useful purpose by watching for moves of resistance and by warning the driver of any unseen dangers in the driving area.

Sudden swerves from one lane to the other are dangerous and unlawful. Signals for left or right turns or for changes from one lane to another must be given at least 100 feet in advance, and the pursuit driver, like other drivers, must assure himself that the maneuver can be executed with safety. If the pursuing officer should attempt to suddenly change lanes from a close following position, the motorist being followed could apply his brakes suddenly and cause the officer to collide with his car. (Refer Exhibit 3, page 83) The motorist could gain the advantage of the normal reaction time of ¾ seconds in this sudden and deliberate effort to wreck the car and the pursuit officer should not permit himself to get into this precarious position.

On the other hand, the sudden swerving to the left may result in a collision with a vehicle which has driven alongside to pass both cars from the rear and has been hidden in the "blind spot" to the left rear of the pursuit driver. (Refer Exhibit 4, page 84) A signal given well in advance will serve as a precaution against this type of situation developing. A careful check of traffic conditions is a must before any maneuver is executed in traffic. It is also possible that a head-on collision with an on-coming car could result from suddenly swerving to pull alongside a car that is being pursued too closely and is close to the center lane; thus, obstructing the pursuing officer's view of the road ahead. This practice is *dangerous.* (Refer Exhibit 5, page 85).

The practice of pulling abreast of the motorist to be stopped is unnecessary and usually results in the motorist getting stopped first and leaving the pursuit officer stranded in the center of the road with the choice of backing up and parking to the rear of the motorist or of driving forward and parking in front. (Refer Exhibit 6, page 86) If traffic accumulates behind, he has no choice. The speed of the pursuit car must be decreased to that of the motorist prior to the stop order being given, or his stopping distance will, in all probability, be greater than that of the motorist. There are two possibilities of danger if the officer parks in front of the motorist. (Refer Exhibit 7 and 8 on pages 87 and 88) He may be run down and he could easily be assaulted with a weapon. Certainly he would be at a distinct disadvantage at night, for he

could be seen and be blinded by the headlights to all action in the car. On the other hand, the motorist could back up, turn around, and attempt an escape to the rear.

The inexperienced pursuit officer has a frequent tendency to mis-gauge his position in the left lane and to swing too far to the left as he makes an attempt to pull alongside another car and signal it to stop. (Refer Exhibit 9, page 89) On roads with low shoulders, movement too far to the left could easily result in the left front wheel dropping off into a rut or hole and the complete loss of control by the driver. (Refer Exhibit 10, page 90) If the left rear wheel should run off the pavement, the car would tend to swerve sharply to the right and could easily strike the car which the pursuit officer intends to stop. The pursuit officer has a two-fold task, that of pulling alongside and signalling the driver to stop. Parking too far to the rear of a car that has been stopped is unwise, in that, when the officer leaves the car to approach the motorist on foot, the car could be driven off just before he arrives. (Refer Exhibit 11, page 91) This, of course, would necessitate his returning to his car and giving pursuit. If the ignition keys were removed, the delay would be even greater and the chances of apprehension lessened.

When a pursuit car is pulled abreast of a motorist's car, there is always a possibility that the motorist will deliberately attempt to force the pursuit car off the road. (Refer Exhibit 12, page 92) This could be done easily by a motorist, with a felonious intent, by speeding up and steering sharply to his left. If the stopping procedure is executed expertly, there is little likelihood of this happening.

C. Explanation of Exercise Plan

(1) Locate caution signs at either end of training area.
(2) Assign two students to each car and have one drive at a speed of 20 miles per hour on a given stretch of road.
(3) Assign two students to ride in each vehicle designated as a patrol car. Assign one to drive and to effect a stop of the other car. The instructor will ride in the right front seat for observation and control purposes.
(4) The same procedure will be employed in each of the other patrol cars with the assistant instructor riding in the right front seat for observation and control purposes.
(5) Have each student conduct two stops at 20 miles per hour and rotate positions in each car until each student has conducted two stops.
(6) Students who fail to develop proficiency should be given more personal attention and should execute additional stops until desired skill is developed.

(7) After each student has achieved the proper skill at 20 miles per hour, increase the speed to 30 miles per hour for two stops for each student.
(8) Grade students on skill and proficiency of the last two stops.
(9) Instructors should point out mistakes to each student as he finishes each maneuver.

III. *Driving Exercises*

A. Demonstrations

The instructors will demonstrate the following incorrect stopping practices: (Students should be called upon to point out each and every error made in demonstrations.)

(1) Sudden swerve into left traffic lane by pursuit officer from close following position without signalling.
(2) Pulling abreast (to parallel position) of motorist that is to be halted at high speed and attempting to stop. Motorist should stop abruptly, making it impossible for the officer to drop back and fall behind motorist. Pursuit officer pulls off road in front of stopped motorist.
(3) Pursuit officer stops in front of motorist and motorist attempts to run him down. Pursuit officer takes refuge in his car.
(4) Pursuit officer stops in front of motorist. Motorist backs out of road block, turns around, and flees in car.
(5) Pursuit officer, while attempting to stop a motorist, swings too far to the left and runs off pavement onto shoulder.
(6) Pursuit officer stops motorist and parks too far behind car, cuts ignition and gets out, and approaches on foot. When halfway there, the car will depart, leaving officer on foot several feet away from his car.
(7) Pursuit officer conducts stop and pulls up even with motorist too far to the left and runs off pavement onto shoulder.
(8) Pursuit officer conducts stop and pulls up even with motorist. Motorist increases speed and cuts left sharply to force officer off road and escapes.
(9) Then instructor will proceed to demonstrate correct procedure for all the above maneuvers.

B. Student Participation

Students will carry out plan of operation shown in II. C.

Allocation of Time

Classroom Program ..... 1 hour
Demonstrations ..... ½ hour
Driving Practice ..... 2½ hours

CHAPTER IV

PURSUIT TURNS (BASIC)

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each group of eight students.

B. One car for each four students.

C. One stop watch for each eight students.

D. Classroom and usual classroom supplies.

E. A one-half mile stretch of isolated roadway with both left and right hand side roads and a space 50 feet wide, including roadway shoulders for "U" turns. An adequate student assembly area near the center of the stretch of roadway should be available.

F. Supplies.
   (1) 80 traffic cones.
   (2) Grading sheets.
   (3) Two "Caution—Training Area" signs.

II. *Classroom Program*

A. Outline of objectives.
   (1) To acquaint student drivers with the four standard turns used in pursuit driving.
      (a) "U" turn.
      (b) Right side road turn.
      (c) Left side road turn.
      (d) "Y" turn.
   (2) To develop skill and proficiency in each roadway turn maneuver. After practice, "U" turns should be completed in from 10 to 14 seconds. Other turns within 15 to 20 seconds. Timing should begin and end at a point where the actual maneuver begins and ends.
   (3) To correct errors made in practice which incite criticism or shorten the life of pursuit vehicle, especially the tires and brakes.
   (4) To grade students on both safety of operation and driving proficiency.

B. Subject discussion

Pursuit Turns

A pursuit officer should realize that a decision to stop a vehicle traveling in the opposite direction must be made in a split second. This is so because, if both vehicles are traveling at a speed of

60 miles per hour, if he continues in the opposite direction, within 15 seconds one-half mile will separate the two cars. If the officer pulls off and stops, within 7½ seconds the other car will be one-eighth of a mile away. Add to this the additional distance that the other car will travel while the pursuit officer is making a turn and it becomes obvious that the pursuit officer must take prompt and decisive action if pursuit is to result in the apprehension of the driver of the other vehicle. This is so because the greater the distance that a motorist can gain between himself and the pursuit car, the greater the chances for his escape. He may, for example, lose himself in heavy traffic, turn off unobserved into a driveway or side road, and he may be able to use the timing of traffic signal lights, to enable him to gain on the pursuing officer.

In order to minimize the time lag element in taking up the pursuit of a car traveling in a direction opposite from that of the pursuit car, a pursuit officer must be able to instantly size up the roadway situation and decide what type of turn can best be made in order to take up pursuit of the other vehicle.

There are four acceptable ways in which an automobile may be turned. These are the "U" turn, the right side road turn, the left side road turn, and the "Y" or road turn. For purposes of this study, these have been designated as "pursuit" turns. The location at which the turn is to be made will determine which "turn" should be used.

(1) *The "U" turn.* The "U" (Refer Exhibits 13, 14, 15, and 16) turn is considered to be both the fastest and the safest way to turn an automobile around and should be used whenever traffic conditions and turning area permit. In order to make a "U" turn it is necessary to have a circle-area 40 to 42 feet in diameter. It is not necessary that this area be paved but it should be free of obstructions or holes that might obstruct travel or cause damage to the patrol vehicle. Since most roadways are only 18 to 22 feet wide, it will be necessary to use both roadway shoulders for this turn. In some instances the location of a side road may permit the use of the roadway opening in executing a "U" turn.

The type of turn to be made will depend in large measure on the roadway and available turning space. If, for example, the roadway, or the roadway together with the shoulders of the road will permit a 40 to 42 foot turn, a "U" turn should be used. Before beginning the turn maneuver the pursuit officer must first check traffic in both directions to see that the turn can be made in safety. Then he should give the correct signal for a left turn at least 100 feet before beginning the turn. After the traffic has been checked, and the left turn signal given, the driver should steer counterclock-

wise until he has completed a 180 degree turn. He should then recheck the traffic in both directions, if he has utilized the roadway shoulders for the "U" turn. (Refer Exhibit 15, page 95).

If the space is available, a pursuit driver should utilize the shoulders on both sides of the highway for a "U" turn. Where both road shoulders are used for a "U" turn, a different procedure is followed. In such case the driver must first check traffic from both directions to see that the maneuver can be made with safety. He must then give a proper signal for a right, rather than a left turn, at least 100 feet in advance of the turn, to indicate that he is about to leave the roadway to the right. He should then turn onto the right shoulder of the road, cut sharply to the left, pause momentarily before entering the road in order to check for oncoming traffic, and follow through on the counterclockwise turn, as outlined above and continue the pursuit.

With practice, a pursuit officer should be able to complete a "U" turn in from 10 to 14 seconds. "U" turns are not recommended for intersections because of the dangers involved due to the multiplicity of possible vehicular and pedestrian traffic movements.

A "U" turn can be satisfactorily made in a turning area of 40 to 42 feet if the counterclockwise steering is completed on the beginning of the maneuver and not gradually on entry into the circle. With cars equipped with standard shift, it will help to shift into second gear, and accelerate after clearance is assured and steering is completed. A "slide turn" characterized by braking at high speed while steering counterclockwise to accomplish a 180 degree turn is not recommended. Such a turn is objectionable from an economic standpoint, in that it is damaging to tires and from a public relations standpoint as well. This type of turn, accompanied by screaming tires and a shower of dust and pebbles, leaves a lasting impression of reckless driving with anyone who observes it.

A "U" turn is safer when a minimum number of traffic lanes are crossed. For example, on a four lane road with a median strip, a "U" turn can be made by turning from the left lane of the roadway on which a pursuit car is traveling, and entering the left lane of the opposite roadway. (Refer Exhibit 13, page 93). In this turn, if the width of the median strip is 20 feet, no other traffic lanes are crossed.

(2) *Right Hand Road Turn.* The right hand road turn (Refer Exhibit 17, page 97) may be used on two-lane roadways. It is considered to be the safest turn for this type road where the roadway width, plus width of roadway shoulders, are

not wide enough for the "U" turn. This type of turn requires a side road to the right. Very little backing is required on the main roadway, and only one traffic lane must be crossed. This type turn will not normally be made where the side road carries a heavy traffic load. With practice, this turn should be made in 13 to 18 seconds.

The procedure for making a right hand road turn is as follows:

(a) Select side road, check rear traffic, and signal for a stop at least 100 feet in advance of stopping.

(b) Keep close to right edge of road and bring the vehicle to a stop approximately ten feet past the side road, flag and allow any traffic to the rear to pass.

(c) Look over right shoulder and recheck traffic to the rear.

(d) Continue to look over the right shoulder, shift into reverse, and back into the side road on the right, continue looking over right shoulder until the vehicle has been brought to a complete stop.

(e) Check for oncoming traffic from both the left and the right, shift into forward gear, give the appropriate signal for a left turn, and re-enter the highway from the side road.

(f) This turn should be completed in 13-18 seconds.

(3) *Left side road turn.* (Refer Exhibit 18, page 98). Where space will not permit a "U" turn, and no right-hand side road is available for a right-hand side road turn, either a left-hand side road turn or a "Y" turn must be made. In such a case, whenever a left-hand side road is available, it should be used. It involves less backing on the roadway.

The procedure for making a left-hand side road turn is as follows:

(a) Select left-hand side road, check front and rear traffic, and signal for a left turn at least 100 feet in advance of turning.

(b) Keeping to the right of the center line, enter the side road to the left, give a stop signal, and bring the vehicle to a stop approximately 20 feet from the highway.

(c) Shift into reverse, look over right shoulder, and back to the edge of the shoulder, pause, check for traffic in both directions, and when traffic conditions permit, back onto the shoulder of the highway. If the width of the roadway shoulder does not permit this, back onto the right traffic lane. Never back across the right lane into the left lane.

(d) Shift into low gear, give the appropriate left turn signal, and enter into (or proceed on) the right traffic lane.

(e) This turn should be completed in 13 to 18 seconds.

(4) *The "Y" turn.* Although not recommended where other type pursuit turns may be used, there are times when it is impossible to make a "U" turn or either a right-hand road turn or a left-hand road turn without traveling a considerable distance to find an available turning space. In this situation, in order to prevent the escape of a vehicle traveling in the opposite direction, the "Y" turn (Refer Exhibit 19, page 99) must be resorted to.

The procedure for making a "Y" turn is as follows:

(a) Check rear traffic and signal for a stop at least 100 feet in advance of stopping.

(b) Bring the vehicle to a stop on the right shoulder at approximately a 15 degree angle from the center of the road.

(c) Shift into reverse, check front traffic, look over right shoulder, check rear traffic, and back up. Turn steering wheel slowly for first 10 feet, then steer counterclockwise 2½ complete turns, until rear wheels barely hit shoulder on the opposite side of the road. On narrow roads it may be necessary to back onto the shoulder.

(d) Shift into low gear or "drive," recheck traffic and move forward into the right traffic lane. This maneuver should be completed in 13 to 18 seconds without skidding.

C. Explanation of Exercise Plan.

(1) Assign two students to direct traffic at each end of the training area. Traffic is to be handled in accordance with standard departmental procedures.

(2) Erect "Caution—Training Area" signs at each end of the training area.

(3) One of the instructors will time each turn.

(4) Assign students to cars to practice each of the pursuit turns. Where more than one student is assigned to one automobile, each student must practice all of the turning maneuvers until each turn can be consistently made within acceptable time minimums.

(5) It is the instructor's responsibility to see that the student receives practice on each turn. One instructor will grade the student on both the safety and efficiency of each turn.

(6) Acceptable safe practices must be followed in each practice maneuver. Careless and reckless operation cannot be tolerated, but should be corrected by the instructor. Students who persist in such actions should be graded downward.

(7) When time permits, use traffic cones to simulate restricted turn spaces and have students practice turns in such areas. This will help the students develop skill in turning and aid

them in judging the position of the wheels, fenders, and bumpers in relation to barriers or obstacles.

III. *Driving Exercises*

A. Demonstration.

(1) One instructor should demonstrate the proper way to make each turn while the other instructor will point out each phase of the course and acquaint the students with the points to be graded.

(2) The "U" turn, as demonstrated by the instructor, should be completed in from 10 to 12 seconds, each of the other turns in from 13 to 15 seconds.

B. Student Participation

Follow exercise plan given under II. C.

Allocation of Time

Classroom Program .....1 hour

Demonstration .....½ hour

Driving Practice .....2½ hours

CHAPTER V

REACTION TIME AND STOPPING DISTANCES

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each group of eight (8) students.

B. One car for each four students.

C. One detonator device for each group of eight students.

D. Classroom and usual classroom supplies.

E. One-fourth mile of straight level road with shoulders of sufficient width for parking.

F. Supplies
   (1) Ammunition for detonator device.
   (2) Chalk.
   (3) Measuring Tape.
   (4) Score cards.
   (5) Speedometer shades.

II. *Classroom Program*

A. Outline of objectives

   (1) Over-all objectives
      (a) To determine the reaction distance and braking distance for each student.
      (b) To determine each student's reaction time.

   (2) Specific objectives
      (a) To establish conclusively in each student officer's mind that there is a period of time known as "reaction time" which necessarily elapses from the time an emergency is seen until the brakes can be applied as one drives an automobile.
      (b) The normal reaction time for a driver is ¾ of a second. This time may be increased, depending on the complexity of the driving situation and the number of choices open to the driver.
      (c) Disprove "short stop" idea.

B. Subject Discussion: *Reaction time and stopping distance* (Refer Exhibits 20, 21 and 22, pages 100, and 101).

Reaction time is defined as the period of time which elapses from the time an emergency is observed in driving a vehicle until the direction the car is traveling can be changed or the brakes applied. It is imperative that every driver of a motor vehicle know this and be governed by this fact in order to avoid colliding

with other motor vehicles and objects on the highways. It is particularly important to the driver as he follows other motorists and anticipates possible alteration of speed or stops without advance signalling. The reaction time does not automatically increase with increased speed but the distance of travel does increase. For the average person the reaction time is about three-fourths of a second. An automobile traveling 60 MPH is moving 88 feet per second and, applying normal reaction time, it would travel 66 feet after an emergency is perceived until the brakes could be applied. At 20 miles per hour the distance of travel would be 22 feet from the time the emergency is seen until the brakes could be applied. This factor is of grave importance in traversing curves and in congested traffic operation. The reaction time varies with different people depending on such factors as age, physical condition, fatigue, and pre-occupation with unrelated matters.

The time required to react to emergencies may be appreciably increased by the complexity of the situation at the time the danger is perceived. For example, a driver sees a child run across the road chasing a cat. Several courses of action may be open to the driver:

1. He may sound the horn and decelerate.
2. He may steer to the right.
3. He may steer to the left and speed up in an effort to outdistance and pass by the child.
4. He may apply the brakes sharply to avoid striking either the child or the cat.
5. A child may be standing in the front seat of the motorist's car. To avoid injury he must be protected from sudden stops. His presence and position in the car tend to make the situation more complex for this driver.
6. A car approaching from the opposite direction restricts the possible action of the driver and divides his attention. His directional movement must not conflict with that of the other motorist. The reaction time in complex situations similar to those described above increases considerably and could conceivably reach a maximum of two or three seconds before the driver responds correctly to the emergency. Incorrect responses may lead to severe accidents.

   If the driver is fatigued, ill, or indifferent to the full-time task of driving he may be involved in a collision due to one or more existent factors. Increased age may result in a slowing down of reaction time. Distractions enter into the matter as important factors. Although a danger may be seen quickly, immediate action must be taken if accidents are to be avoided. A pursuit driver must practice concentration when operating a motor vehicle and realize that he has a two-fold task, that of safe operation and the apprehension of violators at the same

time. He must realize that reaction time is only a part of the total distance required in stopping a car. The safe pursuit driver must concentrate on the road ahead of him, visualizing, and anticipating possible obstacles and escape routes. In pursuit driving this is vitally important for the pursuit driver can never know positively that the fleeing motorist will not wreck and block the path of the pursuit car, or that the fleeing motorist may suddenly lock his brakes and stop in the pursuit officer's route of travel.

Braking distance is defined as that distance which is required to stop a motor vehicle after the brakes are applied. The braking distance does not increase in direct proportion to increase of speed, but is proportional to the square of the difference in speed. For example, at 20 miles per hour the braking distance is approximately 22 feet, but at 40 miles per hour (or twice as fast) the braking distance is four times as great (or 88 feet). At 100 miles per hour the speed is five times greater than at 20 miles per hour. Square five, which equals 25, and multiply by the braking distance at 20 miles per hour (or 22 feet) and the total braking distance is 550 feet (a distance greater than an average city block). This total stopping distance will be 550 feet plus 111 feet of normal, reaction time or 661 feet. Braking distances increase in wet or ice weather or when road surface is not ideal.

A pursuit driver must depend on the safe condition of his pursuit car if he is to survive. He should, therefore, know the mechanical condition of the car at all times and see that every safety device on the pursuit car is in perfect mechanical condition. He is dependent upon his vehicle to assure safe transportation for pursuit, and the ability to stop his pursuit car depends on efficient brakes, the drag factor of the road surface, and his speed of travel. His safety is of primary importance over and above the apprehension of any fleeing motorist.

A pursuit officer must endeavor to perform each and every driving maneuver with skill and proficiency. Consistent and patient practice is a prerequisite to skillful driving. He must constantly strive to avoid reckless or unsafe driving practices which may subject him to criticism. He must avoid taking chances by traversing blind curves at high speeds. He must constantly adjust his speed to the visible stopping distances ahead. He must avoid emergency type stops, unless they are absolutely imperative to avoid an accident.

C. Explanation of Exercise Plan (Refer Exhibit 20, page 100.)

(1) Test car should be equipped with detonator device located on bumper according to instructions.

(2) Shade speedometer with cardboard so that only the instructor can see the speedometer.
(3) Load detonator.
(4) Assign two officers to manually control traffic at each end of the testing area to assure maximum safety.
(5) Traffic will be handled in conformance to set standards of department.
(6) Assign two students to remove spent ammunition and reload detonator device. One shall control the movement of the car while the other reloads the detonator.
(7) Assign the instructor who rides with the students the responsibility for seeing that assignment in No. 6 above is completed and student is clear of car before proceeding with the next demonstration.
(8) Assign two students to measure reaction distances and braking distances designated by detonator chalk deposit and the total stopping distances of each student who is tested. Chalk will be used to mark each point where pavement is discolored by detonator discharge to eliminate confusion in later measurements.

III. *Driving Exercises*

A. Demonstrations

Using the test car, instructors will demonstrate the reaction time and stopping distance for stops at 20, 30, 40, and 50 miles per hour. Instructors will endeavor to bring car to a smooth, even stop without sliding the wheels or throwing the passenger against windshield or dash. Emphasis should be placed on *skill* and *safety* rather than on speed.

B. Student Participation

(1) One student may be assigned to ride in test car with instructor. (Instructor rides in right front.) Student will be instructed to brace himself for sudden stop.
(2) Student who is assigned to make test run will drive on given highway at the speed directed by the instructor. When speed of 20 miles per hour is consistent and is in close proximity of measuring party, the instructor will discharge the detonator.
(3) Student driver will immediately apply brakes, if no emergency situation prevents, in an effort to stop the car as soon as possible.
(4) As the student driver applies the brakes the detonator will again be discharged by the sudden slowing of the car. This second marking will indicate the reaction distance.
(5) When the car comes to a stop, it should remain at that point until measurements can be made of both reaction and braking

distances. The instructor in charge will personally supervise the measuring of these distances and record the data.

(6) The instructor who rides with the student driver will select alternate locations each time for stop to avoid anticipation of stopping place on the part of the student being tested.

(7) After each student's reaction and braking distance has been tested at 20 miles per hour, the performance will be repeated at 30 miles per hour and 40 miles per hour.

(8) Student assignments should be alternated to assure that each student becomes thoroughly familiar with the entire process.

Allocation of Time

Classroom Program	1 hour
Demonstrations	½ hour
Driving Practices	2½ hours

CHAPTER VI

PARALLEL PARKING

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each group of eight students.

B. One car for each two students.

C. One stop watch.

D. Classroom and usual classroom supplies.

E. One-fourth mile stretch of straight and level highway, moderate traffic, with left-hand side road at end and right-hand side road at the other. Road 45 feet wide at either end of training area.

F. Supplies.
   (1) Grading sheets.
   (2) Two "caution-training area" signs.
   (3) Two traffic whistles.

II. *Classroom Program*

A. Outline of objectives.
   (1) Set standard procedure for parallel parking.
   (2) Each student should be able to park satisfactorily in 25-30 seconds. Develop skill in maneuvering.
   (3) Detect and correct errors during practice period.
   (4) Have students practice manual control of traffic in area used for exercise.
   (5) Have students practice "Y" turns.
   (6) Grade students on proficiency.

B. Subject discussion.

Parallel Parking

Parallel parking proficiency is important to the traffic law enforcement officer because people not only observe him very closely and critically as he parks a car, but often they request his advice when parking in close places. If he is unable to park a car expertly, he will hardly be called upon for advice and people will possibly be skeptical of his over-all driving ability. He should know how to parallel park step by step and be able to demonstrate his ability when the occasion demands it.

The procedure for parallel parking is as follows: (Refer Exhibit 23, page 102).

(1) Select parking space about 150 feet in advance of stop.

(2) Check rear traffic. No turning, slowing, or stopping should be effected unless traffic conditions make it safe to do so.

(3) Signal for stop 100 feet prior to stopping.
(4) Stop car two feet to left and parallel with the car parked to the front of the parking space. Rear bumpers should be aligned since cars are of various lengths.
(5) Shift to reverse, check traffic in all directions, and turn steering wheel clockwise two complete turns in first six feet of travel. While observing the position of the vehicle over the right shoulder, continue to back until the car is sitting at a 45 degree angle in the street with the front wheels in a parallel line with the rear axle of the front car.
(6) At this point bring the vehicle to a complete stop. Pause momentarily to observe position of vehicle in respect to parking space, then,
(7) After the position of the vehicle has been checked, continue to back slowly as the wheels are straightened (two or more complete turns to the left).
(8) As the front bumper clears the rear bumper of the car, parked in front, turn steering wheel two or more cycles counterclockwise and back within six inches of the car parked to rear.
(9) Turn steering wheel clockwise four cycles or more in moving forward to position equidistant from either car—turn wheels toward curb on level and downhill grade. Turn wheels away from curb when parked, facing uphill. When parking uphill where there is no curb, front wheels should be turned to the right.
(10) Before alighting from car, set brake, shift to park position and remove ignition key. Exit on curb side.
(11) Exit from parking area—enter car from curb side.
    (a) Shift to neutral, start engine. Allow to warm one minute if cold.
    (b) Turn wheel clockwise one turn in backing to within six inches of rear car while looking over right shoulder.
    (c) Shift to forward gear (low or drive), check traffic by looking over left shoulder, if clear, give left turn signal, hand signal preferred since car to rear makes it difficult to see turn indicator, look forward, and turn steering wheel counterclockwise as vehicle proceeds forward.
    (d) Enter traffic lane, accelerate, adjust speed according to traffic flow.

C. Explanation of exercise plan.

(1) Set up signs at either end of training area and assign two students to control traffic 100 feet inside of each sign location.
(2) Two cars should be located at the parking area with 22 feet of space between cars.
(3) Assign two students to each car and have them alternate in practicing parking exercise.

(4) At regular intervals, alternate students assigned to traffic control duties.

(5) After completing parking maneuvers, each student will have parking errors corrected by the instructor assigned to grade errors, then relieve a fellow student in traffic control assignment.

(6) Assign one instructor to serve as timekeeper and another to judge proficiency for grading purposes.

(7) Two cars should be used in rotation in parking maneuvers to expedite training. As one car vacates and pulls away from parking space, the other car will be in position to pull into position for parking maneuver.

(8) At one end of training area, a side road on right will be utilized for right side road turn in conformance with original instruction. At the other end, a left side road should be utilized for left side road turns.

(9) When one-half of the practice period has elapsed, have students practice "U" turns at one end of training area and "Y" turns at other end for the remainder of the period to develop proficiency in all pursuit turns.

(10) Timing on parking should begin as front bumper of pursuit car passes front bumper of rear car (parallel parked) and end when the driver has completed spacing his vehicle within the parking space and indicates that he has finished the maneuver by blowing his horn.

(11) Student should be graded on the last three trials.

(12) Student should be graded on the manner and time in which he re-enters the car and exits from the parking space.

(13) Students should be careful to avoid colliding with any traffic in the area. Complete isolation from traffic is not necessarily desirable since it is to be encountered in every day driving and must be dealt with safely and considered constantly.

III. *Driving Exercises*

A. Demonstrations

The instructor will demonstrate parallel parking at the beginning of the instruction period. If any students need more personal attention he will perform the demonstration again, as needed, throughout the class period.

B. Student participation.

Students will carry out exercise plan outlined in II C.

Allocation of Time

Classroom Program	1 Hour
Demonstration	¼ Hour
Driving Practice	2¾ Hours

CHAPTER VII

STOPPING MOTORISTS (ADVANCED)

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each eight students.
B. One car, equipped with two-way radios for each two students.
C. One stop watch for each four or more students.
D. Classroom and usual classroom supplies.
E. Two mile stretch of lightly traveled hard surfaced highway 18 to 22 feet wide for demonstration driving. If a paved area is not available, a smooth gravel surfaced roadway may be used.
F. Supplies.
   (1) Eight 6″ x 6″ placards marked "A", "B", "C", and "D".
   (2) Two "Caution-Training Area" signs.
   (3) Cellophane tape.
   (4) Grading sheets.

II. *Classroom Program*

A. Outline of objectives.
   (1) To develop skill and safety in pursuit turns under light traffic conditions.
   (2) To develop sound judgment in selection of type of turn to be made under different situations.
   (3) To observe reaction of student drivers when confronted with traffic problems and obstacles and to correct errors observed in practice.
   (4) To set standards of action for companion officer.

B. Subject Discussion.

Stopping Motorists (Advanced)

Stopping a motorist on a traveled highway involves the same problems and procedures as outlined for stopping a motorist, contained in the more elementary lesson entitled "Stopping Motorists." The principles and procedures outlined in that course must be strictly adhered to in this phase of training since the safety of the general public is a primary consideration. The students who drive the cars which are to be stopped, can, in this phase of the training, anticipate the order to stop and should not be placed in a position that might endanger them. Every consideration generally given and due to all motorists should be afforded them by the driver practicing as a pursuit officer. The student pursuit

officer must always consider his own safety, too, when engaged in stopping a student driver.

In this exercise, a student should be taught to utilize the type pursuit turn that is safest under the existing circumstances. In order to carry out this phase of his training, he should practice stopping a designated student. To be effective, each phase of the stop should be executed safely and with dispatch.

One should not stop on the shoulder of the road unless the stop can be made in conformity with all applicable safety rules. A signal for a stop should be given at least 100 feet in advance or more, depending upon the circumstances, before beginning to decrease speed. Signalling for a stop alone is not sufficient, however. Even when a signal is given, after checking other traffic likely to be affected by the maneuver, the stop cannot be made until the driver ascertains that it can be made in safety.

After the vehicle has been brought to a stop, no forward or backward movement should be made until traffic has again been checked and it is determined that such movement can be made in safety. Before beginning any backing movement, the driver should check for traffic to the rear by looking over his right shoulder. Only in sharp left hand turns, while in the process of backing, should the driver ever look over his left shoulder. Traffic will be checked according to a standard plan which assures that his range of vision is complete so that he can avoid stationary or moving objects which might enter the potential driving field.

Movement into and across other traffic lanes as well as entry into any traffic lane should be preceded by a check of the lane to assure that there is no vehicular or pedestrian movement that would interfere with or prevent safe entry into the lane.

A pursuit driver, when he meets a vehicle which is to be stopped, should immediately scan the area within sight and select, if available, a suitable spot for a pursuit turn. He should then give the proper signal for slowing, stopping, left or right turn, as the case may be, then make the turn safely and efficiently.

A passenger officer in a pursuit car has three primary responsibilities:

(1) He must constantly observe highway intersections and side roads for dangers of possible conflict in vehicular movement or vehicular-pedestrian movement. He should warn the pursuit driver of any imminent danger which he can anticipate. This should be done discretely and not in the manner of a typical back seat driver.

(2) He should constantly observe the occupants of any car which is to be stopped for possible resistance or concealment of objects. This observation responsibility carries through until the driver has been stopped, checked, and released. Whenever

necessary, the passenger officer will supervise the action of passengers to keep them seated and apart from the checking officer while he is busy with the driver. Passengers should not be allowed to enter the highway as pedestrians or to interfere with the pursuit drivers.

(3) Once a motorist has been stopped and while the pursuit officer is questioning the driver, the companion officer should stand at a position just to the rear and to the left of the motorist's car to direct traffic and assure protection from passing motorists. He should also stand in a position to hear the conversation and render assistance as necessary.

C. Explanation of Exercise Plan.

(1) Select a lightly traveled highway for the training area and set up the course. Warning signs should be placed at both ends of the area selected. Placards should be placed on the front and rear of the four cars used in the exercise for identification purposes. Radios should be checked to make sure they are operating correctly.

(2) Plan of operation.
Assign two students to ride in each car. Designate cars "A" and "C" as motorist cars.

(3) One instructor should ride in the right rear seat of each car designated as a pursuit car. These will be designated as cars "B" and "D." The four cars will operate in the same general area and thus present a traffic problem for student drivers attempting to overtake cars "A" and "C," designated as motorist cars.

(4) The instructor in car "B" will direct the driver of car "A" to drive 25 miles per hour and the driver of car "B" to follow car "A" and stop him according to basic rules and practices set forth in the exercise, "Stopping Motorists." The instructor in car "D" will do likewise as to car "C."

(5) Each student should go through this maneuver until he is proficient in each phase.

(6) The instructors should arrange for cars "A" and "C" to be intercepted in vicinity of:
(a) "U" turn space.
(b) Right side road turn space.
(c) Left side road turn space.
(d) At location where road turn ("Y" turn) will be necessary. Students should practice making turns at each of these points as well as stopping cars "A" and "C."

(7) After each stop, student passengers will get out of the car and do the following:
(a) Observe occupants of car being stopped.
(b) Walk to left rear and observe traffic for safety of driver of pursuit car who will conduct interview.

(c) Listen to conversation.
(d) Lend assistance as needed.

(8) Instructors and students must constantly exercise precaution to avoid collision with other highway users while the exercise is in progress.

(9) Students should be taught to make decisions with dispatch and to execute turns with precision.

(10) Speeds in excess of legal speed limit will not be permitted.

(11) Every error and defect should be observed by instructors and corrected to assure maximum safety and proficiency in this phase of pursuit driving.

(12) All radios should be in operation and the instructor should control the movement of assigned motorist cars by radio to set up various problems and to expedite the training process.

(13) The instructors should use stop watches to time maneuvers of students.

III. *Driving Exercises*

A. Demonstration.

The instructor should demonstrate:

(a) Stopping motorist at speeds of 35 to 50 miles per hour.
(b) "U" turn and stopping of motorist doing 35 miles per hour.
(c) Right side road turn and stopping of motorist doing 35 miles per hour.
(d) Left side road turn and stopping of motorist doing 35 miles per hour.
(e) Road turn and stopping of motorist doing 50 miles per hour.

B. Student participation.

Plan of operation will be carried out as outlined in II. C. until each student has become sufficiently proficient in each of these maneuvers.

Allocation of Time

Classroom Program	½ Hour
Demonstrations	½ Hour
Driving Practice	3 Hours

CHAPTER VIII

PRACTICAL DRIVING

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each eight students.
B. Two cars for each eight students.
C. One stop watch.
D. Classroom and usual classroom supplies.
E. Two hundred yard stretch of hard surfaced highway 18 to 22 feet wide with two side roads and a 45 foot hard surfaced space at one end for "U" turning. This area must be blocked off from all traffic.
F. Supplies.
   (1) 100 traffic cones.
   (2) Chalk.
   (3) Two "Caution-Training Area" signs.

II. *Classroom Program*

A. Outline of objectives.

   (1) To develop skill in various pursuit maneuvers.
   (2) To set up a standard safety procedure for:
      (a) Entering a motor vehicle.
      (b) Getting out of a motor vehicle.
      (c) Giving clearly defined hand signals.
      (d) Backing a motor vehicle.
      (e) Making pursuit turns.
   (3) To improve parallel parking ability.

B. Subject Discussion.

Practice Driving

A pursuit driver must develop safe practices in every phase of the driving operation. This entails more than a mere observance of all applicable traffic laws. It means that he must learn to drive defensively. That is to say, he must, in addition to handling his own vehicle legally and safely, anticipate ill-advised, unsafe, and illegal practices by other drivers in order to avoid being struck and injured by them. This does not mean that a pursuit driver must become an insurer of the safety of every other motorist whom he encounters on the roadways. All that it means is that he must learn to protect himself from the unsafe acts of other drivers.

In order to do this it goes without question that a defensive

driver must be thoroughly acquainted with his own vehicle. He must know both its capabilities and its limitations. He must anticipate that most drivers will be less skillful in the operation of an automobile than he, and compensate for their lack of skill by becoming a more skillful driver himself. This can be accomplished only through a better knowledge of and observance of traffic laws, safety rules, a greater safety consciousness, and through hours of practicing safe driving procedures.

Entering a motor vehicle.—It has been said that one's capabilities as a driver can be judged by the manner in which a person enters an automobile. This may or may not be true. What is true, however, is that in the American system of driving the driver usually enters an automobile from the left side. This, we know, is the side of the automobile that is normally exposed to oncoming traffic. Thus, an officer who is correctly parked on the right side of a street or roadway is exposed to the dangers of oncoming traffic when he seeks to enter the automobile from the driver's side. A good rule of thumb is never to enter an automobile on the left side where there is danger from such traffic. A pursuit officer parked alongside a heavily traveled roadway may find it necessary, however, to get into his automobile on the left side. In such case, the danger can be minimized by adhering to the following rules of procedure.

The procedure for entering a parked car from the left side begins with the pursuit driver's approach to the automobile. If there is any danger of traffic exposure, the approach should be parallel to and close to the side of the automobile. After the pursuit officer's approach from the front or rear of the car to a point where the door can be opened, he should open the door about half way only, then slide into the seat. This will decrease the exposure to traffic by from 50 to 60 per cent.

Getting out of a motor vehicle to check a motorist.—The same dangers confront a person in getting out of an automobile when parked on the right of a roadway; therefore, a pursuit driver or other careful person who finds it necessary to alight from the driver's position should reverse the procedures that are discussed above for entering a vehicle. After bringing the vehicle to a complete stop, proper action should be taken to prevent it from rolling backward or forward. Next the left front door should be cautiously opened about halfway and the driver should look back over his left shoulder. Then the driver should slide out of the car, back to the rear of the door and close it, then walk away closely parallel to the vehicle which has been stopped, looking at the occupants constantly.

Passing a stopped motorist.—A stopped motorist meets the same dangers and encounters the same difficulties in entering or leaving a parked vehicle as the pursuit driver. A major difference,

however, is that the officer should be trained in the proper way to enter and leave a parked car. There is no assurance that the parked motorist will have had any such training. The probabilities are that this driver may open the door to the fullest extent, step boldly out of the automobile, and step into the oncoming stream of traffic. In such case, it becomes the duty of the oncoming driver to take defensive actions in order to avoid an accident. This defensive action must be begun whenever a vehicle is noted parked or parking alongside the roadway up ahead. This is a danger signal that should be noted. When it is noted, the driver, whether he be a pursuit driver or not, must anticipate that the stopped motorist may suddenly open the door and step out of the car. In order to lessen the danger that will then exist, the approaching driver should give a warning of his approach with his horn and slow down. If traffic from the opposite direction permits, he should then give the proper signal for changing traffic lanes, change into the opposite traffic lane, and proceed past the parked car. The signal to change traffic lanes should be given at least 100 feet in advance. Width of roadway permitting, the passing vehicle should pass at a minimum of six feet to the left of the parked vehicle. In case of heavy oncoming traffic, the pursuit driver, or other motorist, may have to await a break in the oncoming traffic before passing the stopped vehicle. In such case, a proper signal, indicating an intention to stop, should first be given.

Giving clearly defined hand signals.—In every state the law requires that a motorist give a proper signal before executing a stop, a turn, or a change in traffic lanes. In addition, in most jurisdictions, such as North Carolina, a signal is required before pulling into oncoming traffic from a parked position. Most jurisdictions prescribe the distance that a signal must be given before the maneuver is made. Common sense and ordinary courtesy require that such signals be given in time for following drivers or approaching drivers, as the case may be, to adjust their driving to the maneuver to be made.

The mere fact that an appropriate signal has been given, however, does not give the signalling driver the legal right-of-way over other drivers. The duty remains to see that the maneuver can be made in safety before it is executed. The primary objective of any signalling procedure is to acquaint other drivers with the intended movement. In order to accomplish this objective, standard signals have been adopted in each of the several states. Before this objective can be achieved, however, these signals must be given clearly and distinctly, and at a sufficient distance to adequately warn other drivers.

In North Carolina, electrical signals are given or hand signals are given with the left hand and arm out the driver's window.

The hand signal for stopping and slowing down is given by pointing the arm and hand down, with palm back; the left turn signal by extending the arm and hand straight out from the side of the vehicle, and pointing the index finger; and the right turn signal by holding the forearm and hand straight up, at a 90 degree angle from the shoulder, and with palm forward. Signals for changing to traffic lanes to the right or to the left are given in the same manner as for right or left turns.

Some jurisdictions authorize the use of either hand or mechanical signals. A typical mechanical signalling device utilizes a blinking yellow or white light fore, and a red light aft, on the left of the automobile to indicate a left turn and on the right to indicate a right turn. By their very nature, signal lights are more effective at night, while hand signals may be more effective during daylight hours. Care should be used in utilizing older and dimmer type signal devices during daylight hours, particularly when traveling toward the rising or setting sun. Cautious drivers may find it helpful to utilize both methods of signalling.

Backing a motor vehicle.—The ability to back an automobile is an essential factor in the safe operation of an automobile. It is of particular significance to the pursuit driver since turning delays due to a lack of backing proficiency means valuable time lost. Even one extra or useless backing maneuver may give the pursued motorist a distance-advantage that may prove difficult to overcome. One method of backing is for the driver to steer with the left hand, put the right arm on the back of the front seat, and look back over the right shoulder. This method is usually used in instructing a beginning driver. The pursuit driver normally, however, is expected to steer with both hands at times and to look over his right shoulder while backing for it enables the driver to see better. In rare instances only, such as backing sharply to the left, should a driver open the door and look back to the left while backing. An officer should never use this method in pursuit driving nor should he attempt a backing operation while looking through the rearview mirror.

Making pursuit turns.—This exercise consists of four types of turns; first, the "U" turn; second, the right-hand side road turn; third, the left-hand side road turn; and fourth, the "Y" turn. "U" turns can be made if an area 45 feet in diameter is available.

In making a right side road turn, the pursuit driver will select the road to be used, give the hand signal for stopping approximately 100 feet before reaching the side road, decrease his speed, and bring his vehicle to a gradual stop just past the intersecting side road. Then, after checking and finding the side road free of traffic, he will shift into reverse gear and, following approved backing practices, back into the side road and bring the vehicle to a complete stop. He will then check to the left and right for

oncoming traffic, give the hand signal for making a left turn, and, when traffic permits, pull across the roadway into the proper traffic lane and proceed on his way.

Whenever it becomes necessary to make a left-hand side road turn, and after the left-hand side road to be used has been selected, the pursuit driver will give the appropriate left turn hand signal, slow down to a safe speed, and then, oncoming traffic permitting, make the turn into the side road and bring the vehicle to a stop. Then, following the backing procedures set forth above, traffic permitting, he will back the car onto the shoulder if possible or into the traffic lane, shift into low or drive gear, and drive forward.

A "Y" turn is more dangerous and more difficult to make than either of the other turns. It must be resorted to, however, whenever it is impossible to find a side road to use in the turning operation. In some areas it may be referred to as a road turn. In making a "Y" turn, the following procedure should be used: First, the driver should pick an adequate space for the turn, give the appropriate hand signal for a stop, decrease the speed of the vehicle, and bring it to a stop on the right side of the road at an angle of approximately 15 degrees to the right with the right wheels on the right shoulder. Next, after checking traffic and ascertaining that the movement can be made in safety, he shifts to reverse and begins backing, meanwhile steering with both hands and looking over the right shoulder. After the vehicle is in motion, the steering wheel should be turned counterclockwise and continue backing until the rear wheels have reached the edge of the hard surface on the left. He should then proceed forward, turning the wheel completely clockwise.

Initially, more than one backing maneuver may be required to make a turn in this manner. After several practice turns, however, an average driver should be able to complete the maneuver with only one backing operation. The width of the roadway, the width of each roadway shoulder, and the condition of such roadway shoulders will often determine whether the turn can be accomplished with a single backing operation.

This maneuver could be performed by pulling to a stop on the left side of the roadway and reversing the procedure but this plan is not recommended as it places the driver over in the oncoming traffic lane; thereby, increasing the danger to the driver and posting an obstacle for oncoming traffic. Performing the maneuver from the right side, on the other hand, puts the driver in a position where he can observe traffic, and wave on traffic coming from either direction.

Parallel parking.—No one thing is as impressive evidence of one's driving ability as the ability to parallel park. At best, parallel parking is a difficult thing to accomplish. This difficulty

has been increased by the added length of most automobiles and no comparable increase in the length of marked parking spaces. In addition the process is complicated for many drivers by the presence of following traffic, the flow of which must be delayed by the parking process. Parallel parking can be made easier by following the procedure set forth below. First, select a parking space and give the hand signal for stopping. Pull up alongside the car parked in the space ahead and stop with the rear bumpers of the two cars even, and with the right side of the car two feet to the left of the parked car. Start backing slowly, both hands on the wheel and looking over the right shoulder, and turn the steering wheel to the right as soon as your car begins to move. Continue backing with the steering at the maximum clockwise position until your car is at about a 45 degree angle to the curb. At this point your right front door should be about opposite the rear bumper of the other car. Now straighten your wheels and back straight until the right end of your front bumper is opposite the left end of the rear bumper of the other car. Pause a moment, then turn the wheel to the left and back slowly the rest of the way into the space, straightening out the front wheels just as you approach the curb with the right rear wheel of the car. Now pull forward while steering clockwise, leaving as much space between your car and the car ahead as there is between your car and the car to the rear. Your front and rear wheels should be an equal distance from the curb and no more than 6 inches away from it.

Before leaving the car, the ignition should be cut off, the handbrake set, and the gear shift lever placed in park position. Where there is a curb, turn your front wheels right and into the curb. When parking on an upgrade, however, the front wheels should be turned to the left with rear of the right front wheel against the curb. On an uphill where there is no curb, front wheels should be turned to the right.

C. Explanation of Exercise Plan.

(1) Set up course according to Exhibit 24, page 103.
   (a) Select a 200 yard stretch of hard surfaced road 18 to 22 feet wide containing two side roads and space at one end adequate for a 45 foot traffic circle. If a hard surfaced road is not available, a 200 yard stretch of a smooth surfaced gravel road may be used.

(2) Duty Assignment.
   (a) Assign one student to replace cones at alleyways.
   (b) Assign two students to traffic circle to replace cones.
   (c) Assign three students to car—one as driver.
   (d) Alternate assignments on a rotation basis.

(e) Assign one instructor to grade maneuver throughout the course, and assign another instructor to serve as timekeeper and to inform the instructor who is doing the grading of each student's mistakes.

(3) Driving Practical Course. (Refer Exhibits 24 and 25, pages 103 and 104).

(a) Two students will be seated in each car. As the instructor hands the ignition keys to a student, the timekeeping instructor will start timing the exercise.

(b) Each driver will approach the door on the driver's side from the rear of the car by walking closely parallel to vehicle. Upon reaching the door, it should be opened approximately halfway (not over 24 inches). The driver will then slide into the seat and start the engine.

(c) After starting the engine, each student will give a hand signal for a left turn, look over his left shoulder to check traffic, and, when traffic permits, move smoothly forward as he steers counterclockwise.

(d) As he drives forward, he will approach a vehicle parked on the right. Before passing the parked vehicle, the driver will sound his horn, give a hand signal for a left turn to signify a change in traffic lanes, slacken speed, and pass at least six feet to the left. After the student is safely past the vehicle, he will give the correct hand signal for a right turn, return to the right traffic lane, proceed through the marked alleyways, drive to the end of the course, and bring the vehicle to a stop. The proper hand signal for a stop should be given at least one hundred feet in advance.

(e) The student driver will then back the vehicle at 10 miles per hour in a straight line through the same traffic lane used for the forward movement and bring the vehicle to a stop abreast of the parked car. During the backing maneuver, the driver will steer with both hands and look to the rear over his right shoulder.

(f) Then proceed forward through the same traffic lane, give the proper hand signal for a left turn, and enter the side road on the left, stop, carefully check traffic, and, when traffic permits, back out onto the left shoulder.

(g) Proceed forward again and as he approaches the side road to the right, give the hand signal for a stop, bring the vehicle to a smooth stop just past the side road, and, then following correct backing procedures, back into the side road.

(h) Give a left turn hand signal, and, when traffic permits, enter roadway to the left and proceed to the right side and end of the course, give a proper hand signal to stop,

and complete a road turn in the manner prescribed for a "Y" turn.

(i) Drive car forward to parallel parking space, give stop signal one hundred feet in advance of stopping, stop abreast of the vehicle parked forward of the parking space, and parallel park.

(j) When the parallel parking maneuver has been completed, the driver should give a signal for a left turn, check over his left shoulder for oncoming traffic, drive out of the parking space, signal for a right turn, traverse traffic circle, signal for a stop, stop, set the hand brake, place gear shift lever in "park," remove keys, check over left shoulder for oncoming traffic, and slide out and close the door.

(k) Timing will cease at this moment.

(l) Student passengers should observe and profit by mistakes of others. Student should be graded on their last maneuver through course. (Recklessness should not be tolerated and a student's grade will be reduced in proportion to to the extent of any recklessness observed.)

III. *Driving Exercises*

A. Demonstration.

One instructor should drive through course in proper time allocated following correct order in maneuver. See II. C3.

The other instructor will point out each phase of course and acquaint student with the points to be graded.

Recommended time for driving the course is a minimum of three minutes with a maximum of four minutes.

B. Student Participation.

Students will carry out plan outlined under II C-3.

Allocation of Time

Classroom Program .....1 Hour

Demonstration .....¼ Hour

Practice Driving .....2¾ Hours

CHAPTER IX

EXPERT APPREHENSION

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each eight students.

B. One automobile for each two students—automobiles to be equipped with two-way radios.

C. One stop watch.

D. Classroom and usual classroom supplies.

E. Physical layout for demonstration and practice driving.
   (1) Three-mile stretch of road 18 to 22 feet wide with high crown and normal amount of traffic.
   (2) Two-mile stretch of road 18 to 22 feet wide with a small volume of traffic.

F. Supplies
   (1) Two signs indicating "Caution-Training Area."
   (2) Eight cards 6″ x 6″ marked "A", "B", "C", and "D."
   (3) Grading sheets.
   (4) Note pads for pursuit cars.

II. *Classroom Program*

A. Outline of objectives.

   (1) To develop greater skill in pursuit turns under normal traffic conditions.
   (2) To assure uniform, safe action in pursuit turns.
   (3) To develop greater skill in identifying and apprehending speeding motorists.
   (4) To decrease the possibility of error in pursuit driving under complex circumstances.

B. Subject Discussion.

Expert apprehension involves turning in traffic and stopping a motorist.

(1) *Expert Apprehension.*

An expert traffic enforcement officer should learn to apprehend an average traffic violator quickly and efficiently. With efficient handling of his automobile, this should be accomplished with a minimum of pursuit driving. In the apprehension of traffic offenders and other violators, an officer must be sensitive to the public's reaction. That is to say, he must drive in a manner so as to avoid adverse criticism. Among other things, this means that in all cases he must operate in

a manner that shows consideration for his own safety, the safety of the violator whom he seeks to apprehend, and, above all, the safety of others who may be using the highways. In order to do this, an officer must, therefore of necessity, become an expert in maneuvering his vehicle in congested traffic and under adverse weather and road conditions.

The mere fact that an officer is engaged in his official duty, during a pursuit, does not relieve him of a duty to drive with care and to exercise due caution. He cannot drive in such a manner as to show disregard for the safety of other users of the highways. To do so could result in a holding that such officer was guilty of criminal negligence.

In the pursuit of a violator who is traveling at a high rate of speed, an officer must observe the same rules of safety which are observed in the more elementary maneuvers. In such a pursuit, the expert handling of a pursuit car is of the utmost importance to prevent the loss of valuable time and to assure an immediate pursuit and a timely apprehension.

A traffic officer is not always in a following position when he first observes a traffic violation. He may be traveling in an opposite direction and meeting the offending motorist. In such case, the officer must turn his vehicle around before he can engage in a pursuit. Such turns are called pursuit turns and must be made with care.

The dictates of good judgment prohibit making a pursuit turn on a blind curve or at or near the crest of a hill.

Turning at an intersection is not a safe practice and, in some cases, depending on applicable city ordinances or state laws, it may be unlawful. Intersections are cross paths for both vehicular traffic and pedestrians. Thus, the volume of traffic at any given intersection is the sum of the traffic on each of the intersecting roadways. This increase in the volume of traffic is complicated by the fact that traffic may be moving in four or more directions, while on the average road, excluding pedestrian crossings, the flow of traffic is from two directions only. This increase in traffic volume, coupled with the additional directional flow of traffic, increases the exposure of traffic during turns, thus, adding to the danger of possible collision. If an intersection must be used for a turn, it should not be used until the driver has ascertained that traffic will not be affected adversely by the movement.

Turning in heavy traffic is both dangerous and difficult. It is dangerous because of exposure to oncoming traffic. It is difficult because a driver must wait for an opening in traffic before it is possible to make a turn without blocking the path of one or more oncomnig vehicles or impeding seriously the flow of traffic. If it becomes necessary to turn

on a heavily traveled roadway, there is no alternative other than to wait for an opening in the traffic that will permit a safe turn.

(2) *Stop Maneuvers.*

A pursuit driver may frequently be called upon to simultaneously apprehend two cars that are racing or speeding or otherwise proceeding along the highway in the same direction. Such racing or speeding may be prearranged. In either case, but particularly in case of racing violations, either one or both of the drivers may attempt to escape apprehension by ignoring the pursuit driver's signal and continue moving forward. In other instances, the second or trailing driver may be aware of the pursuit and, upon being passed by the pursuit car while it is overtaking the violator in the lead, decrease his speed, drop back, and, at the first opportunity, turn into another road or turn around and attempt to escape by fleeing in the opposite direction.

An efficient plan for the simultaneous apprehension of two drivers calls for the cooperative effort of two officers. As the officers approach the two cars to be stopped, they should first pass the rear or trailing car. If possible, this should be done without arousing the driver's suspicion for, if he realizes that he is to be stopped, he may become frightened or wary and attempt to ease himself out of the picture. In passing the trailing car, the officer must observe the laws relating to passing. The purpose of this is two-fold: first, to assure the safety of the occupants of the car being passed and, secondly, to keep from arousing any suspicions in the mind of the driver of the passed vehicle that he may be arrested. Prior to, and while engaged in the process of passing, the accompanying officers should identfy the car and record the make, type, model, color, and registration number. During this time, all occupants, particularly the driver, should be identified by race (complexion), age, size, sex, and type and color of clothing. It is important to identify the driver and to note any distinction in race (complexion), age, sex, and clothing between him and other occupants of the car since a switch in drivers may be attempted or made before the apprehension has been completed.

After passing the rear or trailing car, the pursuit car should be brought into position alongside the front car. As the pursuit driver pulls alongside the lead car, he should note the position of the rear car. If the rear car is following at a reasonably close distance and the driver has indicated no attempt to evade the pursuit car, the pursuit driver should turn on the siren and red blinker light and the usual stop procedure should be followed.

This two car stop procedure calls for the accompanying officer to signal to the rear driver to stop in a designated spot. If the rear driver indicates a compliance and begins to bring his vehicle to a stop, the pursuit officer should stop simultaneously with and alongside the front car for stopping in this position will prevent the rear driver from attempting to pass the stopped vehicles and escaping with a burst of speed. Once both cars have been brought to a stop, the accompanying officer should contact the driver of the rear car. In the meantime, the pursuit driver should, whenever possible, park the pursuit vehicle behind the front car and then proceed to contact the front driver by following customary procedures.

Occasionally when the pursuit driver pulls alongside the front car, the rear car may fall some distance behind. When this is observed, the signal to stop does not have to be given to the lead car immediately. As the position of the pursuit car is maintained alongside the pursued automobile, the natural reaction of the driver is to slow down. This slowing down will usually permit the following vehicle to close the gap if he continues forward.

If the two cars become separated, the officers should stop the lead car, complete this contact, and then proceed to locate the second car. If the second car cannot be located, the officers can then resort to the identification information noted earlier to identify correctly both the automobile and the driver, and to instigate legal action against him. This points up the need for noting this information before passing the rear or trailing vehicle.

The pursuit driver may pursue the other vehicle while his companion officer is arresting the driver of the car that has stopped.

In the event a motorist jumps from the vehicle and attempts to flee on foot, the pursuing officer should remove the ignition keys from the pursuit car first, check the other automobile for hidden occupants, and remove the ignition keys from the vehicle. If the driver seeks to make his escape by running along the highway on foot, there is no good reason for not using the pursuit car to pursue him as long as his path of travel lies on or adjacent to the highway. This will save the officer from a long foot race and prevent him from becoming exhausted before the apprehension is made.

C. Explanation of Exercise Plan.

(1) Set up course.

(a) Place two identical placards on front and rear of one car and other placards on cars No. 2, No. 3, and No. 4.

(b) Acquaint students with the road to be used and set up signs at the beginning and at the end of the training course.

(c) Designate cars "A" and "C" as motorists' cars and cars "B" and "D" as pursuit cars.

(2) Duty Assignment.

(a) Assign two students to each car. These students should alternate in driving the pursuit car, riding in pursuit car, driving motorist's car, and riding in motorist's car.

(b) Assign one instructor to ride in the rear of each pursuit car. It will be the duty of this instructor to observe the operation of the pursuit car, the manner, including safety precautions taken, in which the exercises are carried out, and the mechanics of the stops, and to make such timely corrections as may be necessary. The instructor will also see to it that each student passenger carries out his assignment as previously set forth in the basic instructions.

(c) Radios should be utilized to control the efficient movement of cars "A" and "C." Drivers of the pursuit car should operate under the direction of the instructor.

(3) First Plan of Operation—Normal Stops.

(a) Students in cars "A" and "C" will drive back and forth on designated section of highway at speed of 35 miles per hour.

(b) Student drivers in cars "B" and "D," at a signal from instructor, will patrol roadway section where "A" and "C" are operating.

(c) Instructor, through use of radio communications, will arrange for drivers in pursuit cars to meet cars "A" and "C" at or near the following places:

(1) Near side road on right.

(2) Near side road on left.

(3) In vicinity of "U" turn space (45 foot circle space including highway).

(4) At location where a "Y" turn is the only pursuit turn available.

(d) Upon meeting cars "A" and "C," the pursuit car driver will turn his car around, observing all safety rules while turning, and pursue car "A" and "C," depending upon which of the two with whom he is paired. Then, after a suitable speed has been selected, the pursuit driver will stop the fleeing car according to previous instructions.

(e) Again using radio communications, the instructor will arrange for the student drivers to meet one of the paired motorist cars:

(1) On a blind curve.
(2) At or near the crest of a hill.
(3) At or near an intersection.
(4) In heavy traffic.

(f) Students in pursuit cars should not be permitted to exceed stated speed limit in pursuit and will at all times observe the necessary safety precautions.

(4) Second Plan of Operation—Simultaneous Stop of Two Motorists.

(a) This exercise will be carried out on the two-mile section of highway, previously selected.

(b) Acquaint students with location of new section of roadway and place appropriate signs at beginning and end.

(c) Cars "A" and "C," each occupied by four students, will be driven at a speed of 50 miles per hour. (Consistent with speed limit.) In this exercise, the second car should remain as close to the lead car as the applicable state law will permit.

(d) An instructor should follow these two cars at a reasonable following distance until a safe stopping place can be located. This space should not have any escape routes available.

(e) Instructors will demonstrate the following procedure:

(1) In conducting this demonstration, the usual stopping procedure will be used. As the rear car is approached and pulled alongside, and as the horn of the pursuit car is being blown for passing, each instructor and each passenger officer should identify and write down the make, style, model, color, and registration number of the car. In addition, each officer will seek to identify the driver by race, color, sex, size, and clothing, and note any distinctions between the driver and the passengers in the car for use in future identifications.

(2) Following the same basic plan, the pursuit instructor should pull into position alongside the front vehicle preparatory to giving him a signal to stop.

(3) After checking to the rear to see if the following vehicle is in safe following position, the passenger instructor will signal the rear car to stop. At the same time, the driving instructor turns on the siren and overhead blinker and signals the front driver to stop.

(4) Meanwhile, the passenger instructor must keep the driving instructor informed as to whether the rear car is stopping behind the pursuit car and to the rear of the front car. In the meantime, the position

of the pursuit car must be maintained alongside the front vehicle until both the rear and the front cars have been brought to a complete stop, and then until the passenger instructor has reached the rear vehicle and has taken control of the driver.

(5) After the passenger instructor has gained control of the rear driver, the pursuit driving instructor should park the pursuit car in whatever space may be available, preferably to the rear of the front car, and, while the other instructor keeps both drivers under control, get out of the car and contact the driver of the front vehicle.

(6) If it becomes obvious that the rear motorist does not realize that he also is required to stop, the pursuit car should not cut sharply in behind the front motorist and become involved in a collision with him. It may be necessary to delay the stop momentarily. Pulling in behind the front vehicle may open the way for the second car driver to escape by driving to the left around both the pursuit car and the other motorist.

(7) If, during the stopping operation, either driver should attempt to escape by speeding away in either direction, the driver of the pursuit car should not attempt to pursue until he is fully assured that his companion officer has complete control over the other driver.

III. *Driving Exercises*

A. Demonstrations by Instructors.

(1) The instructors should demonstrate method of apprehending two motorists at one time as outlined under II. C. (4) (e) above.

(2) The instructors should demonstrate the procedure for pursuit if one of the motorists reverses directions. (The companion officer should take control of one driver and the pursuit driver should pursue the other driver.)

(3) The instructors should arrange for one driver, on being stopped to jump from the car and flee down the highway. The accompanying student officer should remain with the car and the student passenger in the car. The student driver should pursue the student driver with pursuit car.

B. Student Participation.

(1) Students should carry out plan of exercise listed under II-C.

(2) Rotate the students in each car until each has acquired the proper proficiency in each phase of this maneuver.

(3) Instructors will note and point out errors in operation and make timely criticism while the exercise operation is in progress.

Allocation of Time

Classroom Program .....1 Hour
Demonstration .....1 Hour
Driving Practice .....2 Hours

CHAPTER X

PRECISION MANEUVERING

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each group of eight students.

B. One automobile for each four students.

C. One stop watch.

D. Classroom and usual classroom supplies.

E. Two hundred yards of hard surfaced road for demonstrations and practice driving. If a hard surfaced road is not available, an appropriate smooth graveled roadway may be used.

F. Supplies.

(1) 140 to 200 traffic cones.

(2) Tape measure.

(3) Chalk.

(4) Scoring pads.

II. *Classroom Program*

A. Outline of objectives.

(1) To set up a standard procedure for backing.

(2) To develop skill in backing and turning vehicle in restricted areas.

(3) To teach each student how to handle his vehicle efficiently and skillfully for pursuit driving. (The prescribed course should be driven in 2½ to 3 minutes and the student should be graded on safety and proficiency of his performance. No reckless driving should be tolerated. The minimum time for driving the course should never be under two minutes.)

B. Subject Discussion.

Precision Maneuvering

Pursuit driving calls for a high degree of proficiency on the part of the driver because much of his driving is under hazardous conditions. In pursuing violators and answering calls of an emergency nature, the enforcement officer should be able to control the forward and backward movement of the car with a minimum number of mistakes. He should know where the extremities of the car are with respect to other vehicles, curbs, obstacles, and other objects. He should be able to visualize the exact path of the wheels either forward or backward when driving in confined areas. He should be able to size up a turning space immediately and utilize all of

the available space for a turnabout without backing into a fire hydrant, a hole, or into some other obstruction. Through necessity, he must develop a constant habit of looking back over his right shoulder while backing and continue to survey the path of travel until he stops. In order to get a better view of possible obstacles, however, when backing to the extreme left, he should look over his left shoulder.

In order to keep the vehicle in complete control while backing, the vehicle should be kept in reverse gear. If the vehicle is allowed to coast, the engine will not have any braking effect in case the vehicle begins to swerve to the right or to the left.

When backing a motor vehicle, a driver must instantly alter the course of the vehicle if it veers to the right or to the left. Abrupt changes in direction of travel should be avoided, however, for a sharp turn of the wheel may cause the car to sway or to strike an object if the driver loses control. It could easily result in overturning or other loss of control of the vehicle. If, in backing, it becomes necessary to decrease speed, the clutch on standard gear shift cars should be left engaged and the brakes should be applied evenly. A car being backed up a grade or at a very slow rate of speed can best be controlled by depressing the clutch to reduce the speed. An alert driver should keep his mind on the task he is performing and keep a constant lookout for possible vehicle interference. If he anticipates trouble, he should prepare for it by reducing his speed, sounding the horn, or steering away from the potential danger, as the situation demands.

C. Explanation of Exercise Plan. (Refer Exhibit 26, page 105).

(1) Setup course.

(a) Using traffic cones, set up an alleyway 100 yards long and nine feet wide with a side road for turns. The alley should be laid off by setting up cones seven feet apart in a straight line with spacing of cones decreased to one every three to four feet at turning place.

(b) Chalk road surface at base of cones to facilitate replacing cones at correct locations.

(2) Student Assignment.

(a) Assign six students at regular intervals on the course for cone replacement purposes.

(b) Assign one student to count the number of traffic cones that are knocked over by each driver—before they are replaced.

(c) Assign one instructor to serve as a timekeeper and another instructor to grade each driver as he completes the different maneuvers.

(d) A reasonable grading system should be set up after the instructors have demonstrated the course and

what the students can reasonably be expected to do. Only the last two trials should be graded.

(3) Plan of Operation—Precision Maneuvering.

(a) Each student will begin the exercise from a parked position. The timekeeper's watch should be started as the student enters the car.

(b) Each student must drive to the other end of the course and signal for a stop approximately 100 feet before stopping.

(c) The student must then back the entire length of course and stop, again signalling for a stop approximately 100 feet before stopping.

(d) The student will then drive forward 50 yards to the right side road, signal for a stop, and back into the side road.

(e) Next, the student will drive forward to the starting point, signalling for a stop approximately 100 feet in advance.

(f) The student will then back to the extreme end of the course and stop after giving required signal.

(g) The student will then proceed forward, signal for a left turn, and enter the side road on the left.

(h) Then the student will back out of the side road and proceed to the end of the course, give the proper stop signal, and stop.

(i) The maneuver is completed by backing to the starting point, stopping after the proper signal has been given, cutting off the ignition, and exiting from the vehicle.

(j) Timing will cease as he closes the door of the vehicle.

(k) Students who complete the exercise in less than 2½ minutes will have to drive exceptionally fast. A student who drives recklessly in order to complete the exercise in record time should be downgraded. In cases of extreme recklessness, a failing grade should be given.

(l) Students who lose control of their vehicles and knock down six or more traffic cones at any one location should not be given a passing grade on that trial, but other trial exercises should be permitted.

(4) Move cones in on each end from the 26'5" key locations from the center to 8 feet and practice for even greater skill maneuvering.

III. *Driving Exercises*

A. Demonstration by Instructors.

The instructor should drive the course in approximately two minutes without knocking down any cones and without spinning the wheels. Backing should ordinarily be done by looking over the right shoulder and using the left hand for steering. Both hands may be used if the student is proficient. He must, however, look back while backing and not rely on the rear view mirror.

B. Student Participation.

Students should carry out plan of exercise listed under II-C.

Allocation of Time

Classroom Program .....1 Hour

Demonstration .....¼ Hour

Driving Practice .....2¾ Hours

CHAPTER XI

INTERCHANGE OF TRAFFIC LANES

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each eight students.

B. One automobile for each four students.

C. One stop watch.

D. Classroom and usual classroom supplies.

E. Two hundred yards of hard surfaced road for demonstration and practice driving. If a hard surfaced road is not available, an appropriate smooth graveled roadway may be used.

F. Supplies.
(1) 48 traffic cones.
(2) Chalk.
(3) Grading sheets.

II. *Classroom Program*

A. Outline of objectives.

(1) To develop a student's ability to "positionize" car constantly in close places.
(2) To develop skill in difficult forward and backward maneuvering.
(3) To develop safe expeditious movement with pursuit vehicle.
(4) To detect reactions of students under stress and under conditions adverse to safe operation of a pursuit car.

B. Subject Discussion.

Expert Interchange of Traffic Lanes

Pursuit drivers should be able to judge driving space effectively and efficiently in order to expedite the pursuit of traffic violators and to avoid collision with another vehicle or other traffic. No physical contact, accidental or otherwise, with another vehicle, pedestrian, or other object can be permitted during the pursuit of another motor vehicle. If an officer is constantly aware of the position of the bumpers, fenders and wheels of his vehicle, and maintains adequate control of his vehicle at all times, there is little danger that he will inadvertently strike another vehicle or object either while in the pursuit of violators or in the normal operation of his automobile.

In the process of stopping a violating motorist, it may become necessary to utilize all available space for backward and for-

ward movement and, at times, to use the pursuit car to discourage escape attempts. For example, if a drunken driver halts momentarily at the rear of another vehicle, the pursuit vehicle can be effectively used to block off escape by parking the pursuit vehicle at the rear close to the drunken driver's vehicle in such a manner that will prevent its escape.

This exercise requires a fine degree of precision on the part of the driver in order to consistently and expertly control the forward and backward movement of his vehicle. In addition to acquiring an expertness in the basic maneuvers, the driver should develop an attitude conducive to skillful maneuvering. This attitude which he develops while mastering the course should prevail and remain with him throughout his driving career. It should cause him to take pride in the expert maneuvering of his vehicle and to seek constantly for further improvements. He will probably make errors, but these errors should serve to remind him as he practices the exercise that he does not have perfect coordination and precision, that he will make mistakes at times in spite of his experience, and that no driver ever becomes so proficient that he has nothing further to learn.

C. Explanation of Exercise Plan. (Refer Exhibit 27, page 106)

(1) Set up course.
   (a) Select a 200 yard stretch of highway 18 to 22 feet wide which can be blocked off for practicing the exercise. If a hard surfaced roadway is not available, an appropriate smooth graveled roadway may be used.
   (b) Set up the course.

(2) Student Assignment.
   (a) Provide students with chalk to mark location of cones.
   (b) Assign six students to alleyways to replace cones that are knocked over during the exercise.
   (c) Assign two students to each vehicle for practicing the exercise.
   (d) Assign one instructor as timekeeper for the trials.
   (e) Assign one instructor to serve as judge for grading purposes.

(3) Plan of Operation—Interchange of Traffic Lanes.
   (a) Student shall start engine of his vehicle and, as the timekeeper signals for the start, he will begin by driving down number one alleyway, cross to left lane and drive through alleyways number two, three, four, five, and six, and then signal for a stop.
   (b) The student then should look over his right shoulder and back through alleyways six, five, four, three, two, and one to original starting position.

(c) The timekeeper should stop the watch and the instructor should grade the student.

(d) As each student driver completes the exercise, he will exchange places with the student assigned to number six alleyway and each student will then in turn move up one place.

(e) No premium should be placed on speed in completing this exercise. Emphasis will be on skill, proficiency, and safe operation. After some skill has been achieved, however, the exercise should be completed in approximately one minute.

III. *Driving Exercises*

A. Demonstration by Instructors.

(1) The instructor should drive a vehicle from the starting point through each alleyway in the numerical order given, stop, then reverse his course and back through alleyways six, five, four, three, two, and one to the original starting point without striking any cones. This course should be driven in one to one and one-fourth minutes.

(2) During this exercise an instructor may steer with either the left hand or with both hands. The instructor should look back over his right shoulder while backing.

B. Student Participation.

(1) Students should carry out exercises as set out under II-C. (3).

(2) Instructors should constantly supervise students to correct errors and to improve driving ability. No variations in standard for backing should be allowed to develop. Students should look over right shoulder constantly while backing.

Allocation of Time

Classroom Program	½ Hour
Demonstration	¼ Hour
Practice Driving	3¼ Hours

CHAPTER XII

PRECISION TURNS

(Four Hours)

I. *Personnel, Equipment, and Supplies*

A. Two instructors for each eight students.

B. One automobile for each four students.

C. One stop watch.

D. Classroom and usual classroom supplies.

E. Hard surfaced area (50 x 100 yards) for turning demonstrations and practice driving. If a hard surfaced area is not available, an appropriate smooth graveled area may be used.

F. Supplies.

(1) 150 to 200 traffic cones.

(2) Tape measure.

(3) Chalk.

(4) Grading pads.

II. *Classroom Program*

A. Outline of objectives.

(1) To develop a high degree of skill in driving (both forward and backward) through restricted areas.

(2) To detect inexperienced drivers and to give them special attention and training in driving proficiencies.

(3) To develop standards for backing.

(4) To assure the safety of student officers, motorists, and pedestrians during pursuit turns.

B. Subject Discussion.

Precision Turns—In order to have and to maintain a safe pursuit record, a pursuit officer must know how to maneuver a motor vehicle. He must know how and when to weave in and out of traffic to the best advantage in the pursuit of elusive, fleeing motorists. It is well-known that in order to escape capture or apprehension, fleeing motorists do not observe traffic laws or safe driving practices. Oftentimes they will take chances which the pursuing officer cannot afford to take. In order to offset the advantages which the fleeing motorist has gained through such dangerous and reckless driving practices, the pursuit officer must learn to take advantage of any factors in his favor such as knowledge of the roads. He must be able to handle and maneuver his automobile in restricted areas in a manner that will not endanger himself or interfere with or endanger motorists, pedestrians, or

other users of the highways. He must be able to size up a situation and decide instantly what course of action should be taken. Errors in judgment may result in damage to the pursuit car or injury to others. They will bring on undue criticism of the officer and may bring discredit on the service. These are chances which the pursuit officer can ill afford to take. Another consideration of vital importance to the pursuit officer, and to the traffic enforcement program in general, is that errors in judgment may result in his failing to apprehend violators.

A good driver will learn to locate a possible turning space and use every available foot of clear driving area in order to avoid unnecessary stops and delays in turning. He will learn, when backing, to locate danger spots and possible obstructions, and to avoid them by gradual steering movement to the right or to the left, as the case may be, before reaching them. He will learn to positionize his fenders, bumpers, and wheels in relation to any obstacles in his path in order to avoid damage to his automobile, and other unforeseen delays. This is particularly true in regards to sharp turns which require more time for turning, loss of speed, as well as extra space.

C. Explanation of Exercise.

(1) Select area to be used and block it off for exclusive use in exercise practice. Area should be approximately 50 by 100 yards, and should be paved. Where paved area is not available, a gravel surfaced area will suffice.

(2) For this exercise, a figure "8" course will be used. The course should be approximately 75 yards long, 50 to 75 yards wide, with alleyways marked off with traffic cones. Traffic alleys should be 10 feet wide, except in curves, where alleys should be 12 feet wide. (Refer Exhibit 28, page 107).

(3) After figure "8" traffic course has been set up, (cones should be located on outer edge of lines), the instructor should drive the course, forward and backward, to determine if the spacing is adequate and if the course presents a reasonable problem for the students.

(4) Traffic cones marking course should be circled with chalk for replacement purposes.

D. Duty Assignment.

(1) Assign four students to each side of the figure "8" for replacing traffic cones displaced in practicing exercise.

(2) Assign two students to stand by and observe practice.

(3) Assign one instructor to keep time and to count displaced cones.

(4) Assign one instructor to grade students on the basis of time trials, proficiency, and safety of operation.

(5) Alternate students in different assignments to assure equal participation in each phase of the practice operation.

E. Plan of Operation—Precision Turns.

(1) Student should start engine and, at a signal from the instructor keeping time, he will drive forward counterclockwise in second gear (if vehicle is equipped with standard shift transmission—otherwise in "drive" position), through the figure "8" traffic course.

(2) The student will then reverse his direction and back through the course without stopping, if possible, and without displacing any traffic cones.

(3) The instructor should not encourage the students to complete this exercise in less than 60 seconds; however, a student's performance will be downgraded for recklessness.

(4) In performing this exercise, the student should sit erect and ride close to the inside of the figure "8" on reverse movement and steer promptly in order to stay on the inside of the circle.

III. *Driving Exercises*

A. Demonstrations by Instructors.

An instructor should be able to drive forward through the course (in second gear with standard gear shift cars) and then back through it in reverse, in from 45 to 60 seconds without displacing any cones.

B. Student Participation.

(1) In practicing this exercise, each student will follow the plan set forth in II-E.

(2) On an initial practice run, a student should not be expected to complete the course in materially less than 2 minutes. Initial emphasis should be placed on precision in maneuvering rather than on speed. After the course has been mastered as to performing the maneuvers without displacement of traffic cones, attention should be given to improving the time for completion of the exercise.

Allocation of Time

Classroom Program	½ Hour
Demonstrations by Instructor	¼ Hour
Practice Driving	3¼ Hours

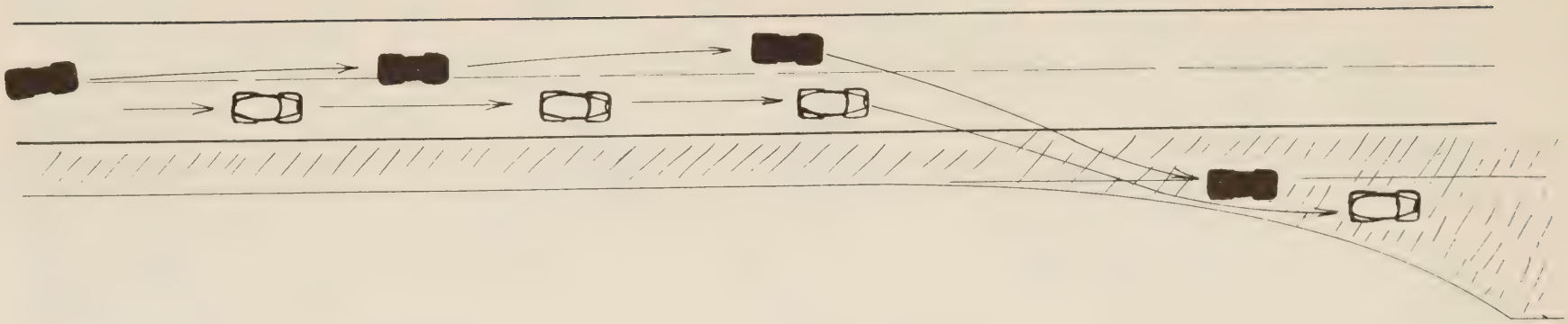


Exhibit 1

Correct Procedure

For stopping motorist

1. Follow at safe distance - Move left Just right of center line. Survey Traffic and Parking area.
2. Signal for left turn, and Change traffic Lanes.
3. Pull up to within 6 feet of Car and Recheck traffic
4. Turn on blinker - Slow down to same speed by braking.
5. Signal Motorist to Stop.
6. Signal for Right turn - Park 6 feet to Rear & 3 feet left.

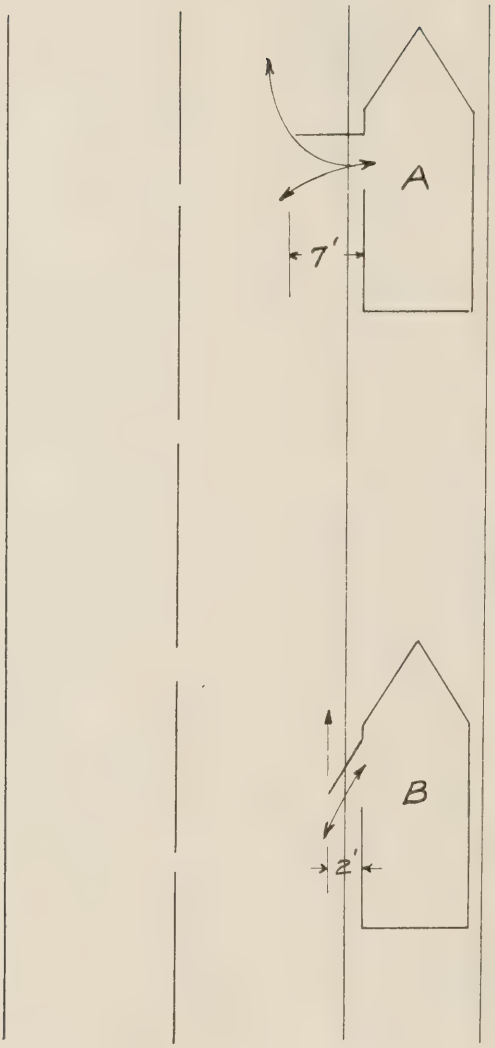


Exhibit 2

Traffic Exposure Pursuit

Officer may enter or exit from Pursuit car by sliding in and out with minimum exposure to danger. He should look Constantly at occupants of car to be Stopped from moment he signals driver to Stop until Personal Contact is made.

Exhibit 3

Close Following and sudden Swerving Left may result in Collision if Motorist Suddenly applies brakes either inadvertently or on Purpose.

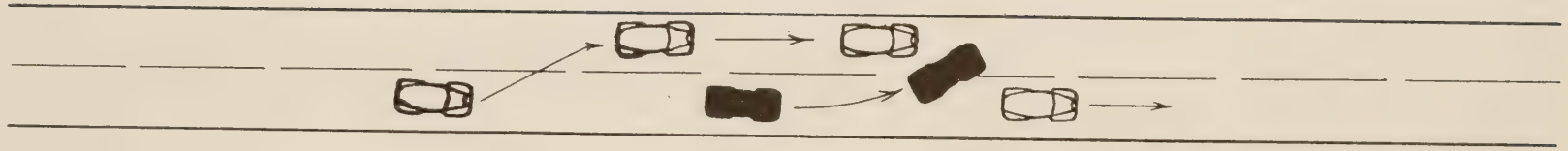


Exhibit 4
Sudden Swerve left—
unsafe act may result
in Collision with oncoming
Vehicle which was unseen
to left rear of Pursuit Car.

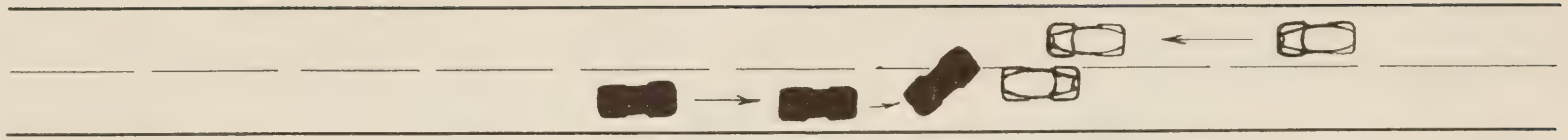


Exhibit 5

Sudden Swerve Left from extreme right may result in head-on Collision with Car approaching from opposite direction unseen from original Position. vision blocked by Motorist's Car.

Exhibit 6

pulling abreast unnecessarily and may result in pursuit officer being forced to park in front of motorist because of accumulatory traffic at rear.

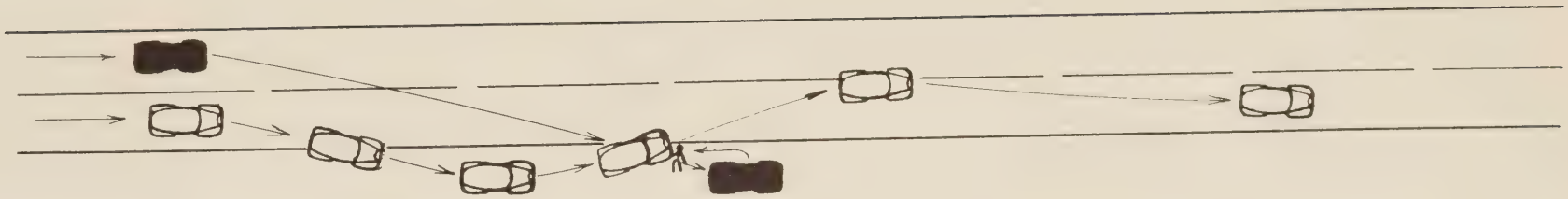


Exhibit 7
Parking in front of Motorist may result in Officer being blinded at night, being assaulted or being "run down" by felon.

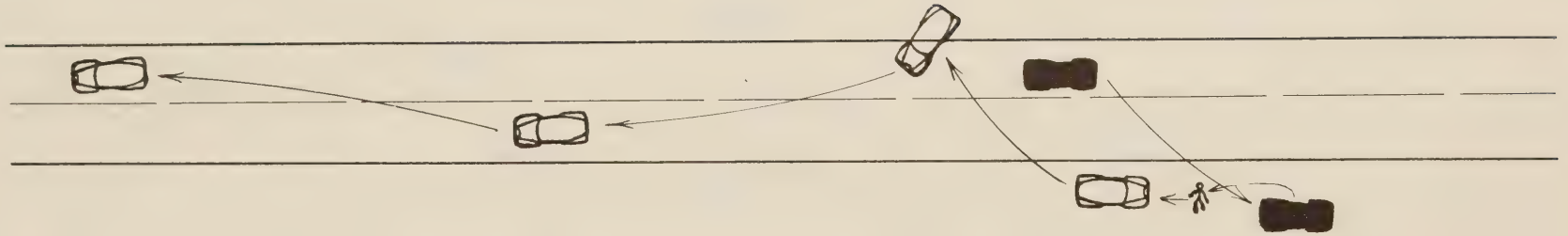


Exhibit 8
Parking in front may permit Motorist to reverse direction and escape.

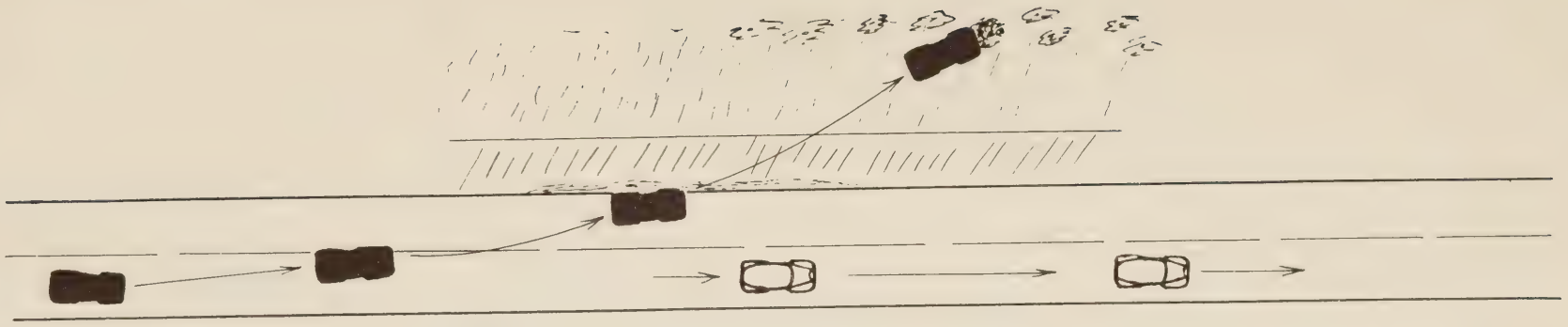


Exhibit 9

Pulling too far left may result in loss of control if left front wheel runs off left side and strikes a soft or low spot.

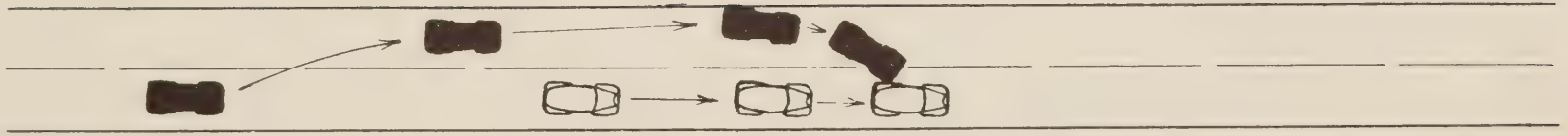


Exhibit 10
Pulling abreast of Motorist and steering too far left may result in left rear wheel dropping off on low shoulder and sudden swerve to right and Collision with Motorist.

Exhibit 11

Parking too far to rear of motorist and stop of engine of pursuit car may result in motorist feeling as officer approaches on foot.

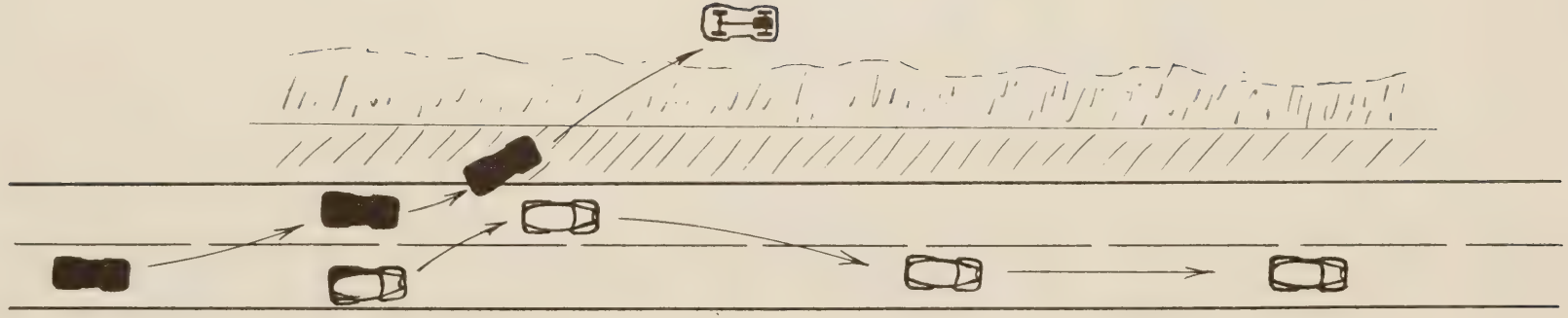


Exhibit 12

Motorist could suddenly swerve left and force pursuit officer off the road if officer pulls abreast in effort to stop Motorist.

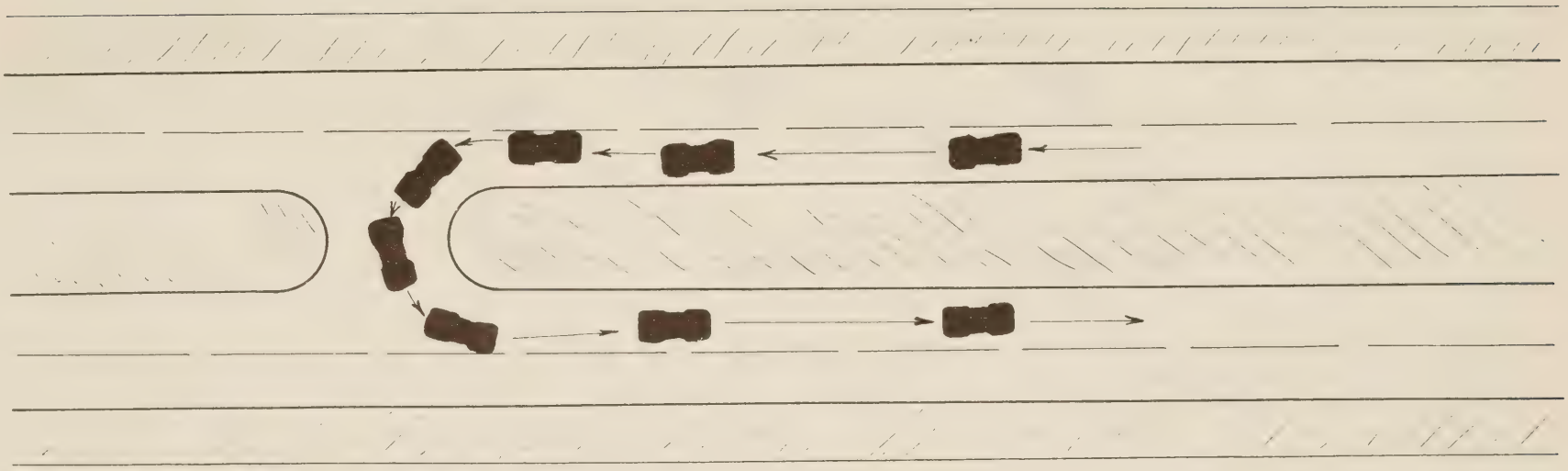


Exhibit 13

"U" Turn This maneuver is Adaptable with maximum safety on highways 40 feet wide. If median strip is 20 feet wide no Crossing of lanes is necessary.

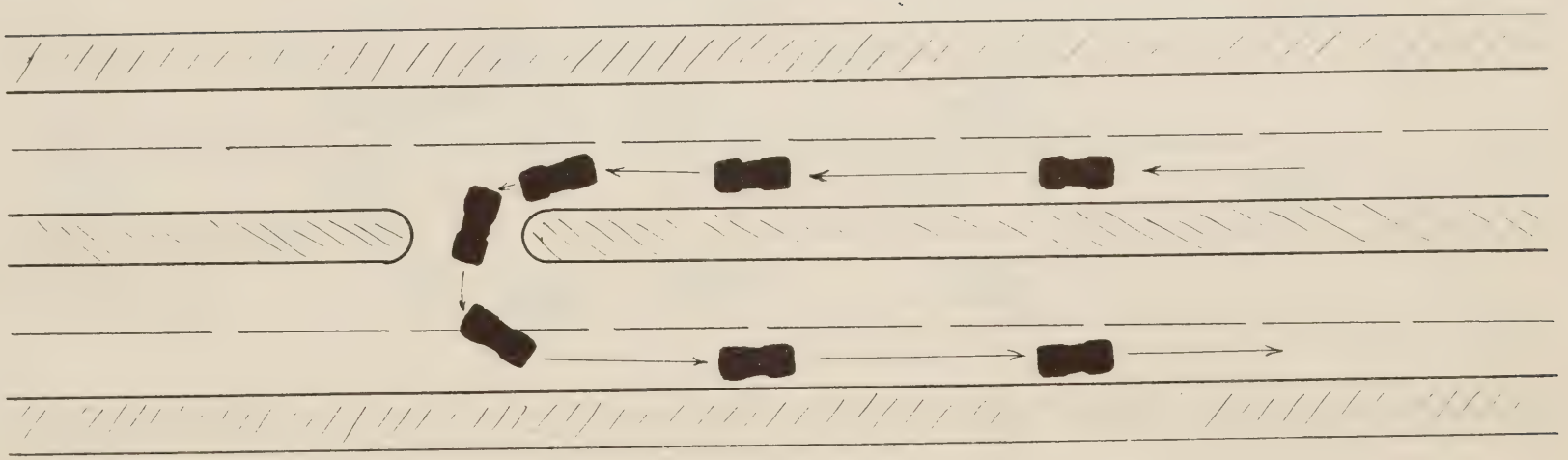
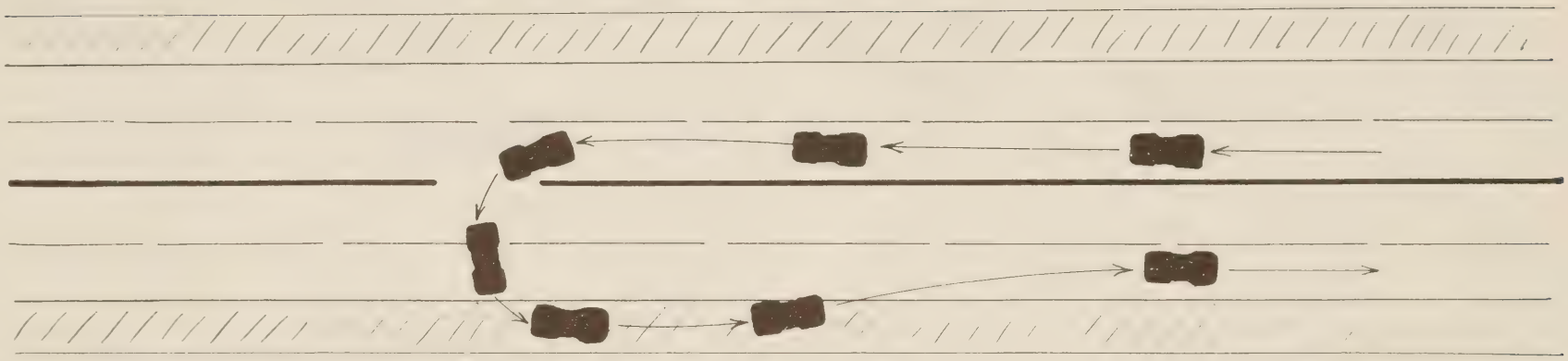


Exhibit 14

"U" Turn May be utilized even though Median strip is 10 feet wide. Crossing of one traffic lane is necessary, but is clearly visible to the front.

Exhibit 15

"U" turn may be utilized even though Road is 40 feet wide by using left Shoulder, this act requires the crossing of two lanes and the use of the shoulder of the road. A check of the traffic is prerequisite, to reentering traffic lane.



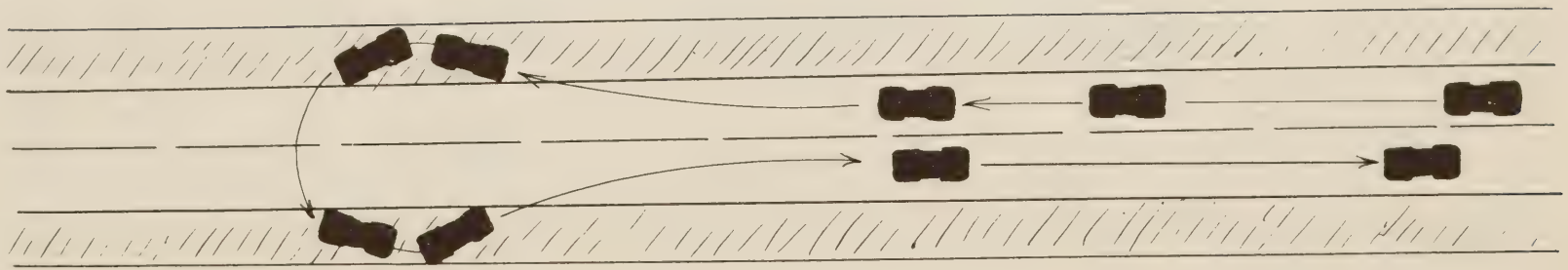


Exhibit 16

"U" Turn

If 40 feet of usable surface including shoulders is available a "U" turn may be executed safely after exit, a recheck of traffic must be made before reentering traffic lane.

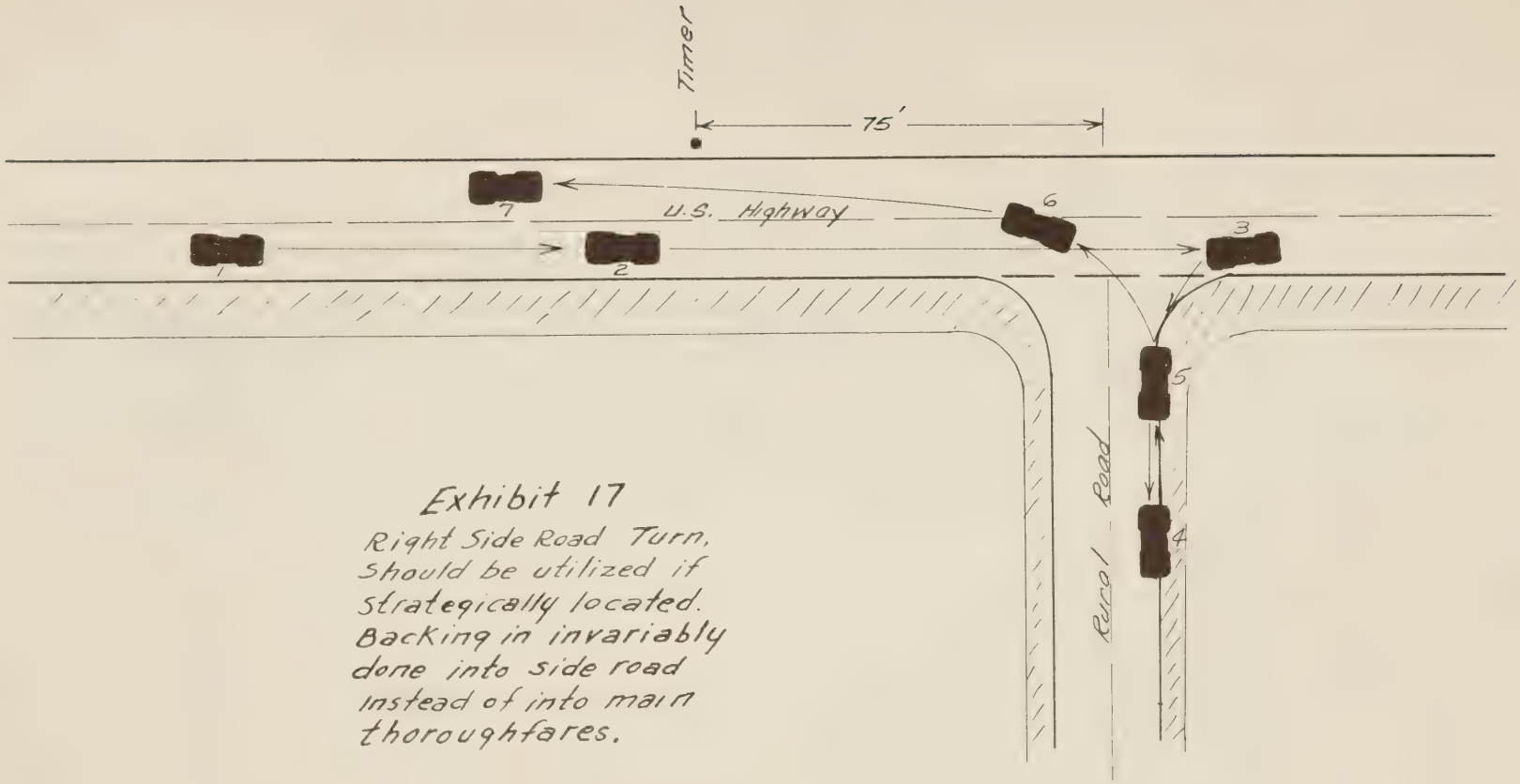


Exhibit 17

Right Side Road Turn, Should be utilized if strategically located. Backing in invariably done into side road instead of into main thoroughfares.

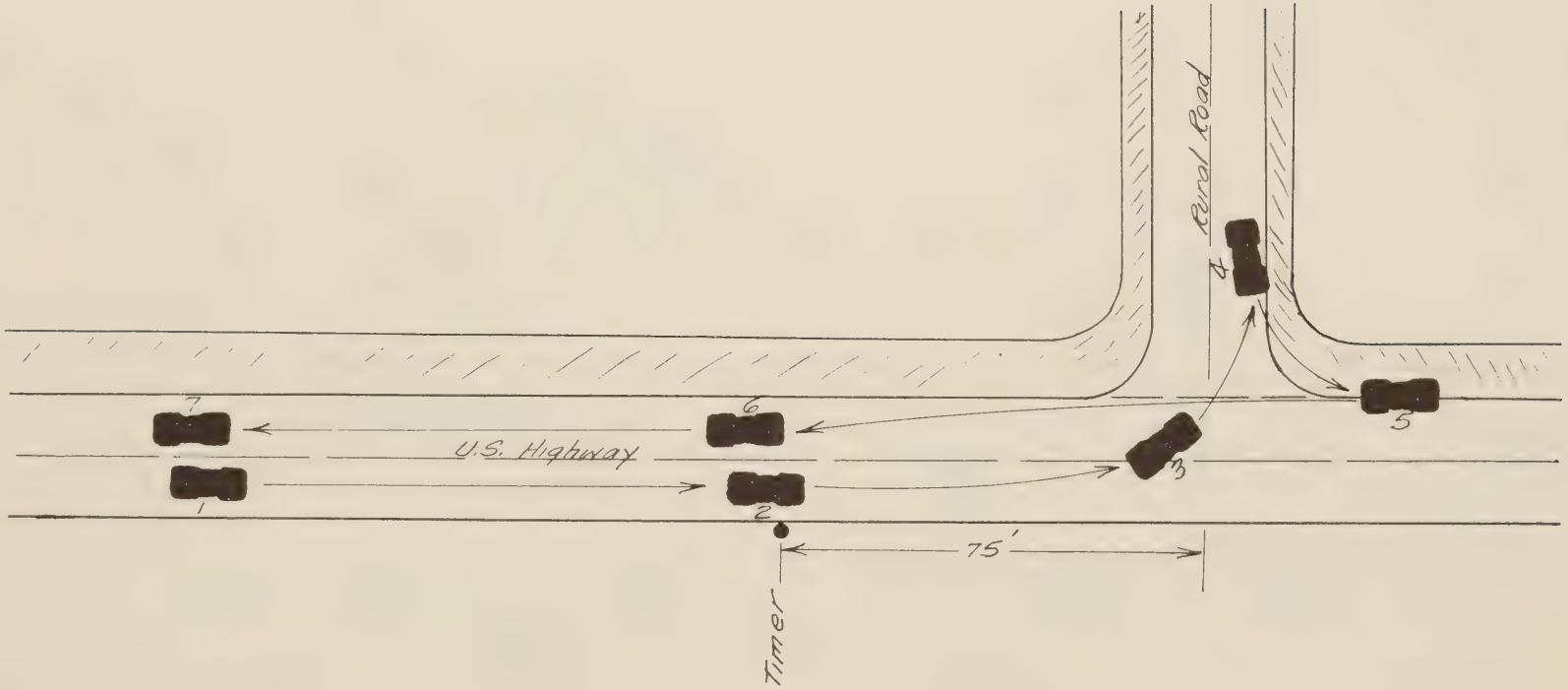


Exhibit 18

Left side Road Turn

Provides turning space over and above "Y" Turn. Backing should be done cautiously onto shoulder if available

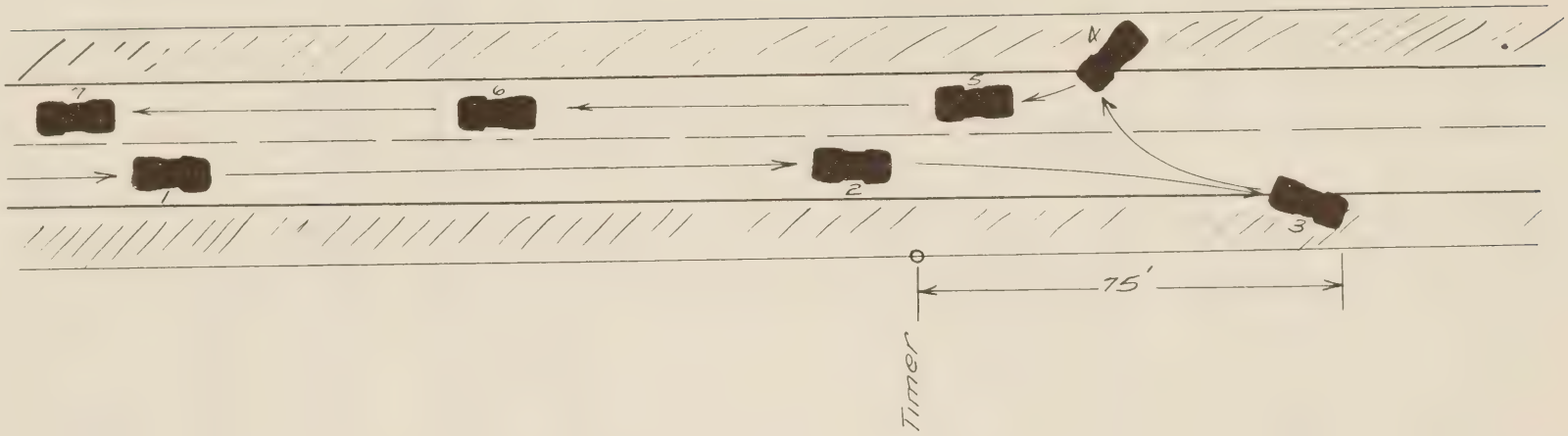


Exhibit 19

"Y" Turn can be executed if 25-30 feet of surface is usable Care must be exercised to avoid dropping a wheel off the shoulder on either side of the road or of backing into the path of an oncoming vehicle

Exhibit 20

Reaction Time & Stopping Distance

Plan

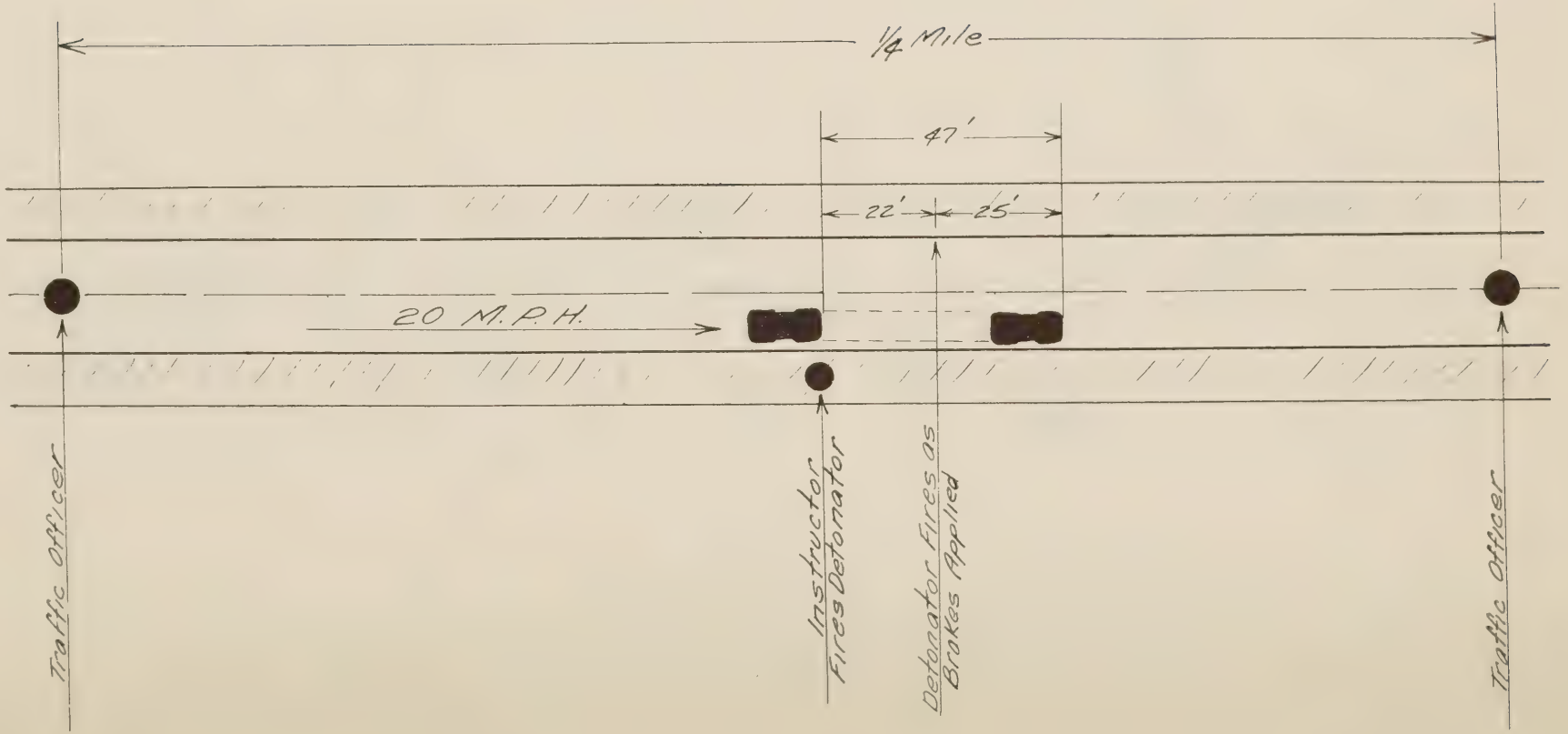


Exhibit 21

STOPPING DISTANCE CHART

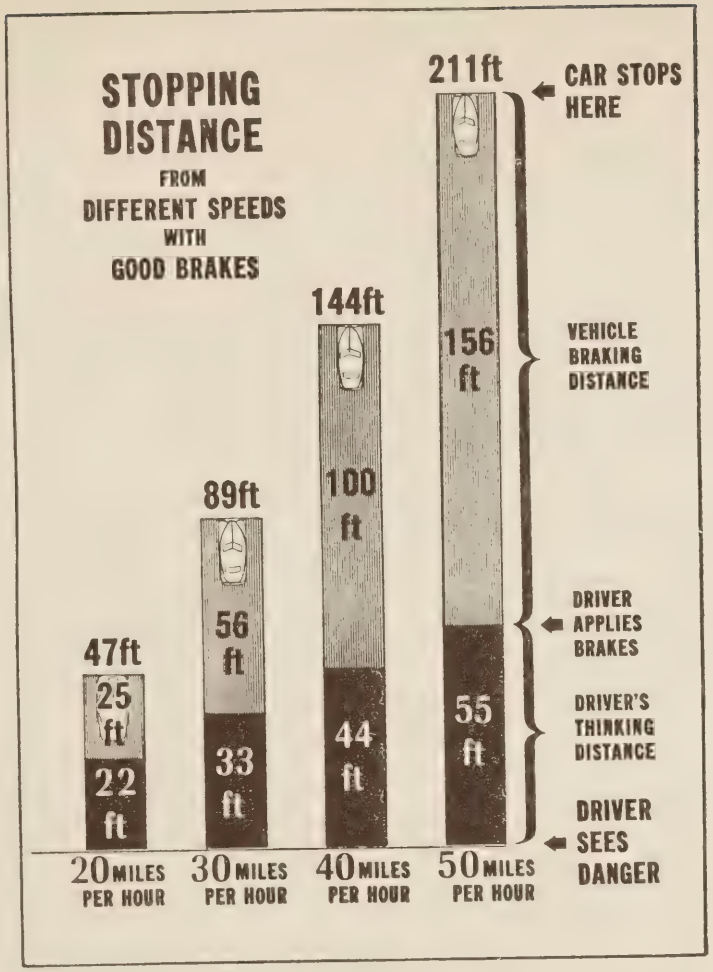


Exhibit 22

TOTAL STOPPING DISTANCE CHART

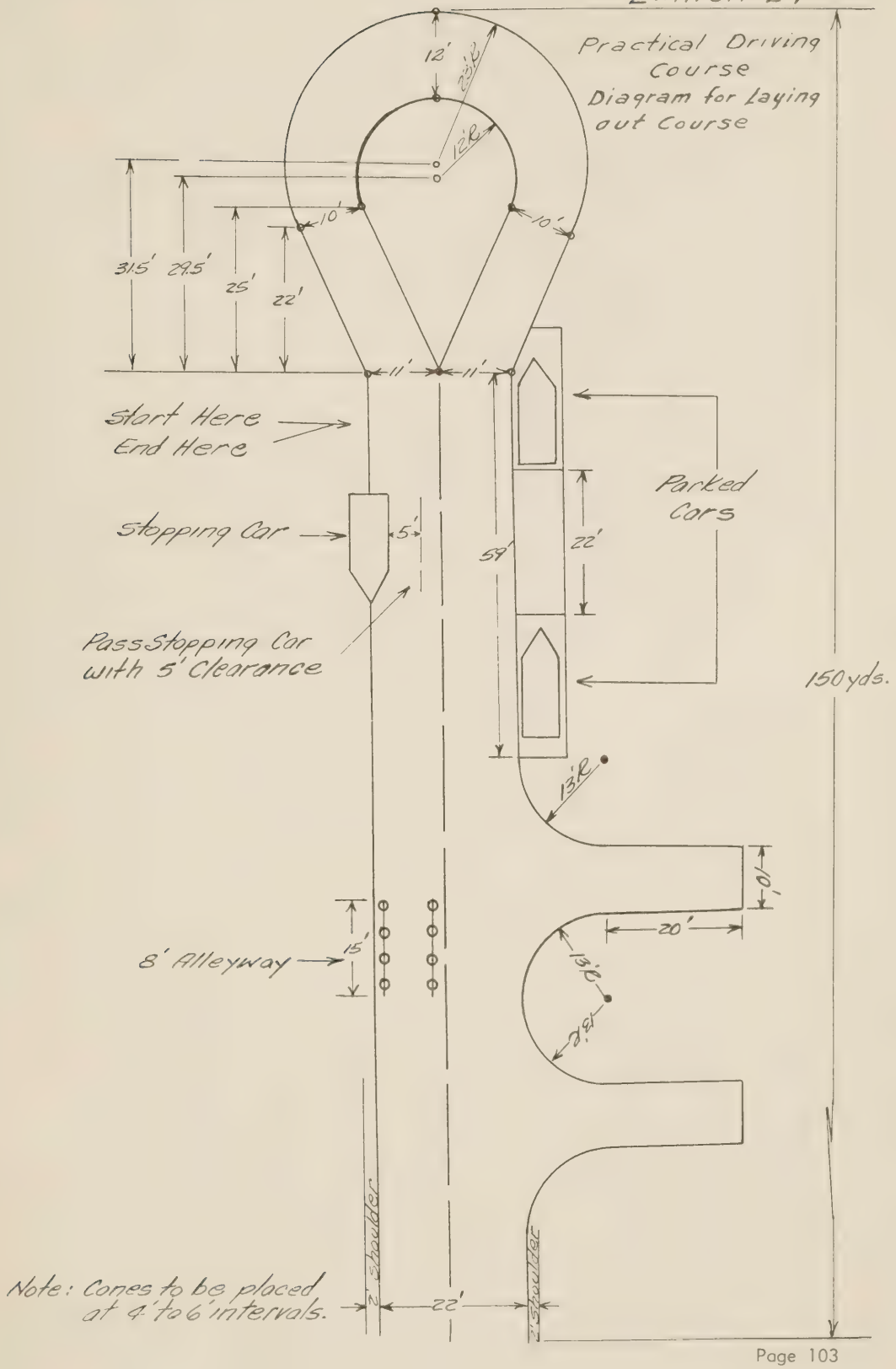
Reaction, Braking, and Total Stopping Distances

Speed in MPH	Distances in Feet		
	Reaction	Braking	Stopping
5	5	2	7
10	11	6	17
15	17	14	31
20	22	25	47
25	28	39	67
30	33	56	89
35	38	77	115
40	44	100	144
45	49	127	176
50	55	156	211
55	61	189	250
60	66	225	291
65	72	264	336
70	77	306	383
75	82	352	434
80	88	400	488
85	93	452	545
90	99	506	605
95	105	564	669
100	110	625	735

Note: Figures in the table above have been rounded to the nearest whole number.

Exhibit 23
Parallel Parking
Plan

Exhibit 24



Note: Cones to be placed at 4' to 6' intervals.

GRADING SHEET FOR PRACTICAL DRIVING COURSE

Exhibit 25.
Grading Sheet
for
Practical Driving Course

NAME	Entry-Front & Rear Check	Left Turn Signal	Sound Horn-Clearance	Stop Signal 100 Ft.	Backing Straight 100 Ft.	Left Turn Signal-Entry-Exit	Stop Signal	Right Side Road-Entry-Exit	Stop Signal	Road Turn	Stop Signal	Parallel Parking	Exit From Parking	Right Turn Signal	Stop Signal	Parking Area	Left Turn Signal	Traffic Signal	Parking-Circle Turn	Distanced Cones	Timing		GRADE
(POSSIBLE SCORE)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5			100

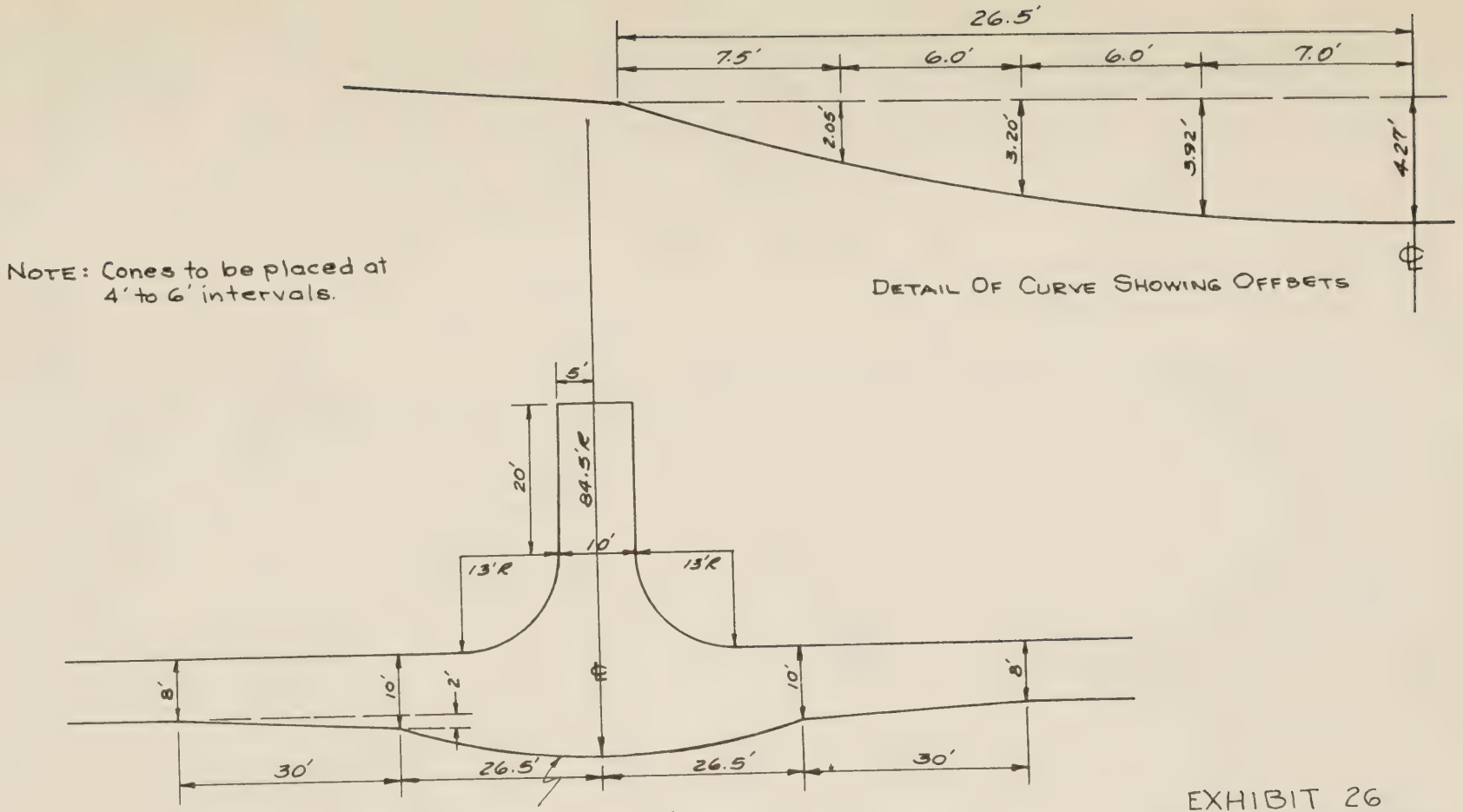


EXHIBIT 26
PRECISION MANEUVERING
DIAGRAM FOR LAYING OUT COURSE

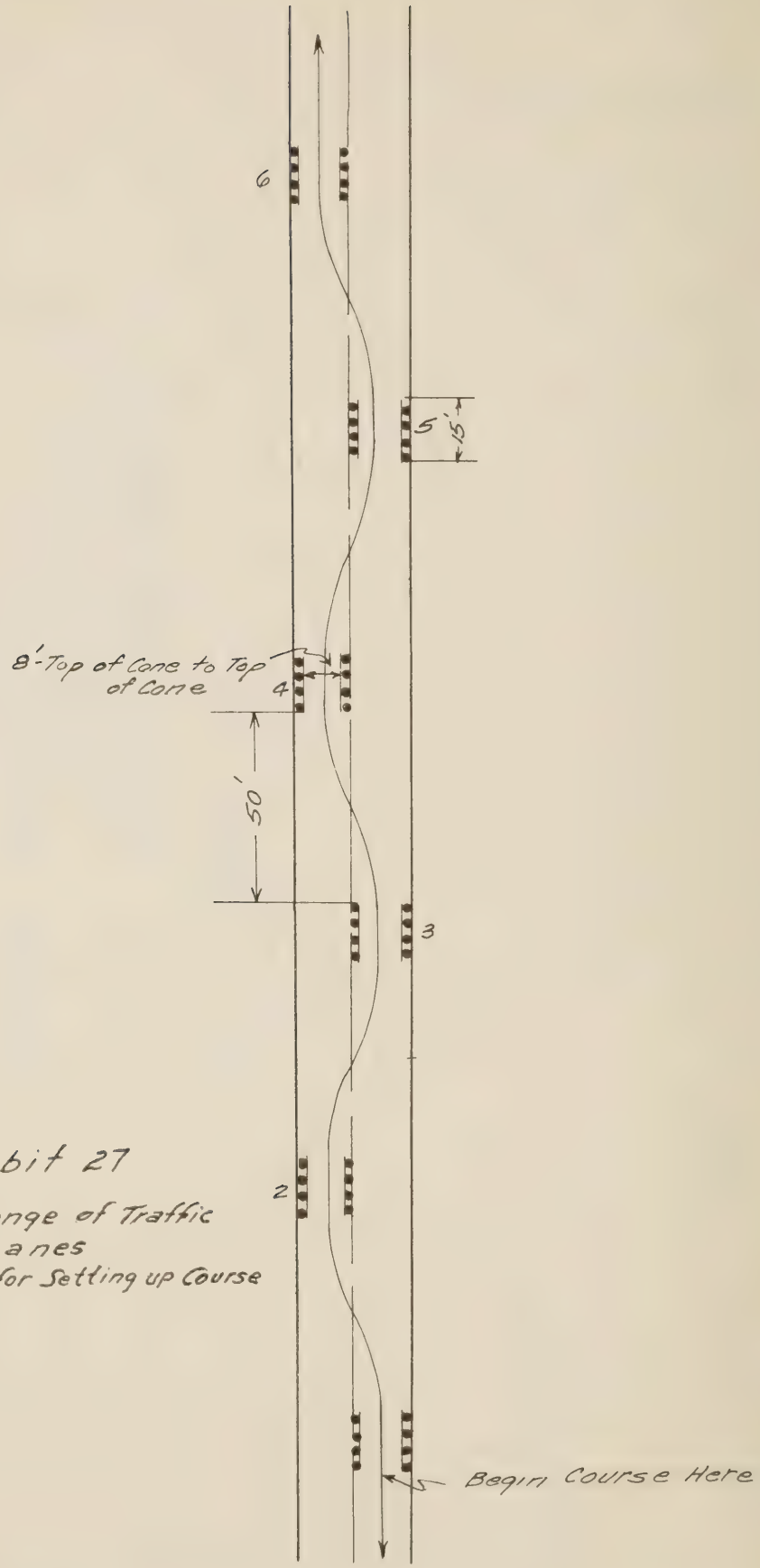
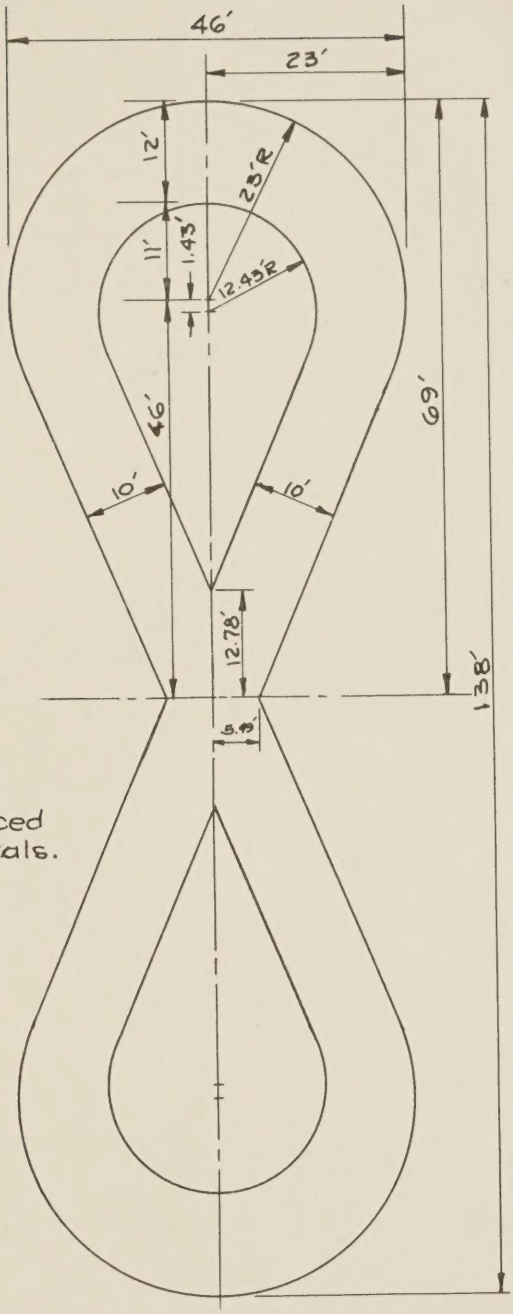


Exhibit 27

Interchange of Traffic Lanes
Diagram for Setting up Course

North Carolina State Library
Raleigh



OTE: Cones to be placed at 4' to 6' intervals.

EXHIBIT 28

PRECISION TURNING

DIAGRAM FOR SETTING UP COURSE

NOV 2 1965